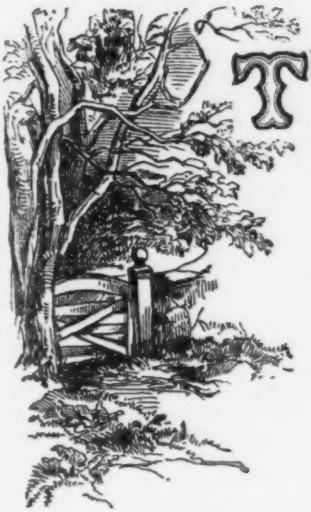
Ages of Trees.

CONDENSED FROM AN ARTICLE BY PROFESSOR ASA GRAY.



THE celebrated Sycamore-maple, *Acer Pseudo-Platanus*, stands near the entrance of the village of Trons, in the Grisons, the cradle of liberty in the Rhœtian Alps; under the once spreading branches of this now hollow and cloven trunk, the Gray League was solemnly ratified in 1424. Upon the supposition that it was only a century old when the meeting to which its celebrity is owing, took place,—and a younger tree would hardly be selected for the purpose,—it has now attained the age of 533 years. It can scarcely be younger, it may be much older than this. In some of the earlier accounts, this tree is said to be a Linden; they were better patriots than botanists in those days, for the investigations of Colonel Bontemps leave no doubt as to the identity of the tree.

The Linden in the town of Friburg, which was planted in 1476 to commemorate the bloody battle of Morât, though now beginning to decay, has already proved a more durable memorial than the famous ossuary of the battle field,

> "Where Burgundy bequeathed his tombless host
> A bony heap through ages to remain,
> Themselves their monument;—"

and may even outlast the obelisk recently erected upon its site. The age of this tree and the girth of its trunk being well known,—having attained the circumference of fourteen English feet in 364 years,—it has been employed as a standard of comparison, in computing the age of larger and more venerable trunks of the same species. Such a tree is still standing near the town of Morât in full vigor, although portions of its bark are known to have been stripped off about the time of the battle in 1476, when it was already a noted tree. At four feet above the ground the trunk has a circumference of thirty-eight English feet, and consequently a diameter of about twelve feet; supposing it to have grown a little more rapidly than the Friburg Linden, which may be deemed a safe estimate when we recollect that old trees grow much more slowly than younger ones,—supposing it to have increased in diameter at the average rate of one-sixth of an inch in a year, it must have been 864 years old at the time the measurement was made in 1831. It is not probable that this estimate materially exaggerates the age of the tree, even supposing the Linden at Friburg to have grown at less than the average rate of the species. It is nearly corroborated, indeed,

by the more celebrated Linden at Neustadt on the Kocher, in Wurtemburg, whose age rests wholly on historic evidence. Evelyn, it will be remembered, mentions it, and Trembly visited it in 1831, at the instance of the illustrious De Candolle. It was already remarkable early in the 13th century, for documents prove that the village of Helmbundt having been destroyed in 1226, was rebuilt three years afterwards, at some distance from its former site, in the vicinity of this tree, and took the name of *Neustadt an der grossen Linden*. An old poem of 1408 informs us that "before the gate rises a Linden, whose branches are sustained by 67 columns." The number of these columns, or pillars of stone, raised to support the heavy and widely spreading branches, one of which extends horizontally for more than a hundred feet, had increased to 82 when the tree was visited by Evelyn, and to 106 when examined by Trembley. To these supports, doubtless, its preservation is chiefly owing. They are nearly covered with inscriptions, of which the most ancient in Evelyn's time bore the date of 1551, but the oldest now legible is dated 1558. At five or six feet from the ground the tree is 35½ English feet in circumference. If, therefore, it has grown at the actual rate of the Friburg Linden, it must have reached its thousandth anniversary; or if we allow a sixth of an inch per annum its age would be a little over 800 years; surely, a moderate estimate for a tree which was called the Great Linden more than six centuries ago.

The famous Chestnut in Sicily, according to Brydone, who visited it in 1770, had trunks, for it had then the appearance of five distinct trees, measuring 204 feet in circumference; but later and more trustworthy observers reduce these dimensions to 185 feet. A hut has been erected in the hollow space, with an oven, in which the inhabitants dry the chestnuts, and other fruits, using at times, for fuel, pieces cut with a hatchet from the interior of the tree. The separation of a large hollow trunk into independent portions, appearing like the remains of as many distinct trees, is not in itself improbable, but it is probable that these present trunks were offshoots from a more ancient stem.

Mount Ætna has some colossal chestnuts with undoubtedly single trunks, three of which recently measured are found to have a circumference respectively of 57, 64, and 70 feet.

But the Oak, the emblem of embodied strength, and one of the longest-lived, as it is the slowest growing of deciduous forest trees,

"Lord of the wood, the long-surviving Oak,"

has been most observed. Among the oldest specimens now extant in England are to be enumerated the "Parliament Oak," in Clipstone Park, supposed to be the oldest Park in England; this tree derives its name from a Parliament having been held under it by Edward the First, in 1290; the "Cowthorpe Oak" in Yorkshire, the trunk of which measures 78 feet in circumference near the ground, and whose age is estimated as nearly cœval with the Christian era; another in Northamptonshire, the Salcey Forest Oak, is perhaps of equal antiquity. A tree at Bordza, felled some forty years ago, was proved by its annual layers to have been about 1000 years old; this was a goodly oak, but it shrinks into insignificance when compared with one in the south of France, which, according to an account in Professor Lindley's Gardener's Chronicle, whose trunk has a circumference from 85 to 94 feet; at the height of a man, from 60 to 67 feet. The diameter of the whole head,

from 40 to 43 yards; the height of the trunk 8 yards; the general height of the tree 22 yards. Upon a plate of wood taken from the trunk about the height of the door of the room hollowed into it, 200 annual rings have been counted, whence it results, in taking a horizontal radius from the exterior circumference to the centre of the oak, that there must have been from 1,800 to 2,000 of these rings; which makes its age nearly 2000 years.

Rich although North America is, above all other parts of the world, in different species of oak, it would not be difficult to explain why we cannot boast such venerable trees,

> "Whose boughs are mossed with age,
> And high tops bald with dry antiquity."

It is chiefly that in clearing away the forest which so recently covered the soil; "men were famous according as they had lifted up axes upon the thick trees." The close, stifling growth of our primeval forests, like the democratic institutions which they seem to foreshadow, although favorable to mediocrity, forbids preëminence. "A chilly, cheerless, everlasting shade," prevents the fullest individual development; and even if the woodman's axe had spared the older trees, their high-drawn trunks, no longer shielded by the dense ray of their brethren, were sure to be overthrown by the winds. Had the aboriginal inhabitants been tillers of the ground, our White Oaks had long since spread their broad arms, and emulated their more renowned brethren in the Parks of England. The "Wadsworth Oak" may claim a higher antiquity, and the "Charter Oak" of Hartford was probably only a sapling at the first settlement of our country. Bartram measured a Live Oak from 12 to 18 feet in girth, and mentions "some of 18 or 20, each limb forming a gentle curve from its base to its extremity. I have stepped" he says, "above 50 paces, on a straight line, from the trunk of one to the extremity of the limbs."

Michaux mentions a tree felled near Charleston, whose trunk was 24 feet in circumference. The Olive grows more slowly than the Oak; one mentioned by De Candolle had a trunk 24 feet in girth, and was believed to be 700 years old; another 1000 years. Upon the Mount of Olives there is said to be still living eight venerable specimens of the Olive, which may have been in existence, as tradition asserts, at the time of our Saviour's passion.

A Cypress tree at Somna, in Lombardy, figured by Loudon, according to tradition was planted in the year of our Saviour's birth. Even Napoleon deviated from a direct line to avoid injuring it, when laying down the plan of the great road over the Simplon. Its trunk was 20 feet in girth in 1832. There is an ancient chronicle at Milan which proves this tree to have been in existence in the time of Julius Cæsar!

When Prince de Joinville visited Mount Lebanon in 1836, one of his officers stated that all but one of the sixteen old Cedars mentioned by Maundrell are still alive, although in a decaying state; and that one of the healthiest, but perhaps the smallest trunks, measured 36 English feet in circumference, but he does not say at what height. De Candolle deems the trees to have been nearly 900 years old. This estimate may fall considerably below the truth, but our present knowledge will not warrant the assumption of a higher one. Doubtless this remarkable forest has existed from primeval times, while the oldest individuals, from age to age, have decayed and disappeared.

Of the yews at Fountains Abbey, 1200 years seems a fair estimate of

their age; that at Dryburgh 600 years; the "Darley Yew" 1350 years; one in Dorsetshire 1600 years; and one long since disappeared, if the rule applied to the growth of this tree holds good, which was 2,540 years old at the time of its death. The trunk of the "Fortingal Yew" in Scotland was 52 feet in circumference in 1769, and still survives; in all probability it was a flourishing tree at the commencement of the Christian era.

The Lambert Pine of California attains a great age; we have calculated one mentioned by Douglass at 1,100 years. The great Cypress of Mexico at Atlisco, has a girth of 76 English feet. But this is greatly surpassed by one, the measurement of which is mentioned by Humboldt, 118 English feet in circumference. This tree has excited much interest; our Minister, Mr. Poinsett, was requested by the American Philosophical Society to give further particulars. He transmitted a communication from Mr. Exter, an English traveler who had carefully examined the tree in question, who gives the circumference of the trunk as 122 English feet. This has been substantially confirmed since, and others are mentioned of equal size.

The "Cypress of Montezuma" may have existed for twenty-seven centuries, but 2000 years is quite within bounds. De Candolle the younger, infers that the great Cypress of Santa Maria del Tule, if really the growth of a single trunk, is from 5000 to 6000 years old; the lowest estimate is about 4050 years; and here, without following Dr. Gray, or touching upon the more recent discoveries of the Washingtonia in California, we close our condensed account, only adding that the Baobabs of Senegambia are esteemed to be 5000 or 6000 years old. Its roots have been traced to a distance of more than a 100 feet without reaching their extremity; and these trees, it has been conjectured, may have been in existence several thousand years, or nearly from the period of the universal? deluge, being thus the most ancient living monuments of the world; compared with these monumental *living* trees the mouldering relics of the earliest Egyptian civilization are but structures of yesterday.

FAST GROWING SHADE TREES.

BY A PRACTICAL PLANTER.

It is often objected to us as a people, that we are too forward to make haste. We have little credit for extreme patience. Whatever we have to do, must be done at once. "The more haste the less speed," is too old fogyish for a modern proverb. It might do in the days of stage coaches, and spinning wheels, but tastes mouldy in our fastidious mouths.

Nor are we much to be blamed. Life is short, and few of us come into the world with silver spoons in our mouths, as it is said of more favored beings in other parts of the earth. If there is any enjoyment to be had by exchanging the wooden spoon for one of genuine argentine character, the sooner it is bartered away, who will not say it is all for the better?

There is, of course, such a thing as being too fast; of acting in haste and repenting at leisure; but the spirit which seeks to annihilate time and space, and endeavors to compass in the limit of three score and ten the enjoyments of the fabulous term of Methusalah, is undoubtedly the correct one, says Young America.

Most of our successful men start into business life comparatively penniless. Few achieve an independence till their heads get gray; and, after securing a home in some suburb, and baking in the sun under the nineties in summer, and being frozen almost dry by the cutting winds of our arctic winters, who can wonder that such immense sums are annually wasted on "big trees" in the vicinity of all large cities? I have known as much as $100 to be spent on the removal of a single large tree. In the hands of a skillful gardener such grand operations may, and often do, succeed well; but they are, on the whole, miserable and expensive failures. But can nothing be done to cheer our declining years with the shade and shelter our bodily wants petition for? Will not the Landscape gardener's art lower its dignity a little, and in the name of old age, bend a little to its utilitarian spirit? We can enjoy an Italian landscape, in a splendid picture—feast the eye on the delicacies of light and shade in some Swiss mountain; or pity the poor "Laplanders of the North," while enjoying the pleasures of a winter in the Antilles. But *our* heat, and *our* cold! Can we enjoy the sight of an iceberg while roasting, and not be allowed to come within the influence of the frigid luxury? or freezing, feel any pleasure in the sight of a distant fire we may not approach? Then, gentlemen, shade us—shelter and shade us—you may then give us Chatsworth, or Versailles, or anything you please, superior to any of them all.

A little more attention to *fast growing trees*—and no lofty position of high art need be encroached on either—will do wonders for us.

Most fast growing trees have few or no other recommendations, and many have objectionable points. No one would be willing to exchange an Oak for an Abele, or a Horse Chestnut for an Ailanthus. Yet both these much abused trees are, like some people, very well in their proper places. Most beautiful trees are slow growers, and are undoubtedly, as we are told, worth waiting for; but while they are coming on, why not fill in between with any kind of quick growing trees; and, where shade and shelter is of paramount importance, if they are not thickly planted among slower growing kinds, they ought rather to constitute the entire planting, than to be absent altogether.

The *Abele* or *Silver Poplar*, is perhaps the best known of fast growing trees. It is not a desirable tree for a lawn, because of the innumerable suckers it throws up through the grass after it has reached ten or fifteen years of age; but for a street tree, where suckering can do little or no harm, there are few trees better adapted. It will grow well in any soil but a poor one,—in which indeed no street tree should be planted,—or in any situation wet or dry; though, as with all poplars, the former is preferred. Slower growing trees, as Norway Maples, American Lindens, and the various Oaks might be alternated with them, and the Poplars after some few years taken away; immediate shade would then be gained, while eventually to shade would be added beautiful forms and interesting colors.

All the Poplars are desirable for forming immediate shade or shelter. The gray Poplar, (*P. Canescens*,) however, enjoys with the Abele the reputation of suckering up too freely after its few first years of vigorous growth are over, to be trusted long on the lawn. For use there, to mix with other trees till they grow, or to make rapid screens, nothing is superior to the Virginian or Swiss Poplar, (P. Monilifera,) commonly known in our nurseries as

the "Cottonwood," and "*P. Angulata.*"* It has one fault, however, that it grows too erect, approaching the Lombardy in that respect. This may, however, be somewhat remedied by shortening the top shoots while they are growing, which throws more force into the lowermost ones. I have a specimen so treated, with a head as round as a Linden. The true *P. Angulata*, or Carolinian Cottonwood, is naturally a more spreading headed tree, and nearly as fast in growth. I do not think it is in any of our nurseries however, so that the readers of this paper will not be able to avail themselves of any advantages they may possess. I believe the figure in Downing, of the "Cottonwood," accurately represents this species when full grown. Neither of the two species just described are objectionable in the way of suckering. The Balsam Poplar, (*P. Balsamea*,) is of very common occurrence, but most undeservedly so. It is a very bad suckerer, very liable to be bored "all over" with worms, and thus is very short lived.

The Aspen section are not bad for much suckering, and they have pretty round heads. They do not grow quite so fast as the Cottonwood, but are very desirable for variety. The *P. Grandidentata*, or large American Aspen, is the strongest grower; *P. Tremula*, the English, the next; and *P. Tremuloides* the weakest, though a very pretty grower.

The Willows are all very rapid growing trees, and the common weeping (*Salix Babylonica*) and the ring-leaved (S. Bab. annularis) well known. I am not over-fond of weeping-willows, but must admit that to most tastes they are very pleasing. Whatever beauty, however, they may possess, is certainly inside of the first fifteen years of their existence, and they may be spared without regret afterwards. The White Willow, (Salix alba) and the Sallow, (*S. Russelliana*) also grow rapidly to a good size; but I don't like them—they look too marshy; and two years of the "chills and fevers" in such a spot makes my teeth feel like chattering when I look at them. I *can* tolerate the *S. Vitellina*, for its handsome golden bark in the winter time. May I say anything in favor of the *Ailanthus?* When the worms have destroyed all the Elms and European Lindens, the borers riddled your ashes and locusts, the caterpillars denuded your maples and willows of their grateful verdure, and the smoke and chemical gases well nigh destroyed the balance in your crowded cities, you may be glad to fall back on one you have contemned, that will effectually defy all such enemies.

Of permanent trees, the most rapid growers are undoubtedly the Silver and Sycamore Maples, the Larch, and the Paulownia; and amongst evergreen trees, the Norway Spruce and White and Austrian Pines. I may as well remark that much of the rapidity of growth these trees will exhibit, will depend on the soil. In a deep, rich, and rather damp soil, they will grow much faster than in a very damp or poor one.

I ought not, perhaps, to pass over the merits of the English Alder. I have seen this frequently grow ten feet in a season, and besides, the green glossy leaves are very beautiful.

* It is not surprising that our nurserymen have these poplars so confused, when even botanists have led the way. It appears that before Michaux came to this country he was familiar with the "Virginian Poplar," as the *P. Monilifera* of Aiton, in cultivation there. Here in its native place it had a different appearance; and, supposing it some other kind, named it *P. Canadensis*, and wondered why "his father and himself, and several learned botanists, who, like them, had traversed the states in every direction," could not find it. Populus Canadensis, plate 95—and P. Monilifera, plate 96, fig. 2—of Michaux (J. Jay Smith's edition), belong to the same plant, and the cottonwood of the nurseries.

The true Populus Angulata has the branches angled, as well as the "Virginian Cottonwood." The angled branches of the *P. Monilifera* is probably the reason of its having been wrongly named "Angulata" by the nurserymen. T. M.

[It would be a curious question for a child to ask "Why are the best trees, like the best people, the most scarce?" It would be best answered by the the observation that "soon ripe—soon rotten," prevails throughout nature's operations. Time is necessary to develope those qualities that are most in esteem; vegetation that goes on slowly, produces hardness and durability; good children all die young, was the argument against goodness, of a sad young dog; and few enough, indeed, are the entirely solid characters that obtain maturity, or make the mark in the world that their early growth gave promise of. Poor soil, winds, and insects; blown about by false aims and falser doctrines, the number of us humans who attain solidity and enduring fame is fewer than the trees of the forest. But we are moralizing, when we only designed to commend our correspondent's remarks, and especially that portion in which he recommends the topping of the *Populus Monilifera;* the practical result is wonderfully satisfactory. The objection in practice to planting trees that are to be cut down hereafter when their neighbors have grown, is simply that people rarely or never do it; they become attached to their bantlings, and "hate to cut down a tree." Why, in case of crowding, it is the best thing you can do. It may be dangerous to take an axe into your confidence, but, as in education with the rod, it is possible to spare the axe and spoil all your plantation; use it, however, discreetly. Ed.]

CLARA GRAPE.*

This valuable seedling of Mr. P. Raabe, Philadelphia, has already been mentioned in the ad-interim report of the Pennsylvania Horticultural Society, 1853, and is described by Dr. Brincklè as: "Bunch medium, berry medium: round, green faintly tinged with salmon when exposed to the sun; flesh tender, juicy, flavor rich, sweet and delicious, quality best." Period of maturity, September.

To the above description we have nothing to add. It was the same berry in 1858, larger in size, and the vine more vigorous and productive. It is to be regretted that such a valuable acquisition has been so long neglected; we should now be able to judge its hardiness in different latitudes and aspects.

Mr. P. Raabe, the originator, has kindly furnished us with the historical facts relating to its origin; we quote his lines:

"The historical part of our Clara is a hard matter to make out as we do not know the parents of that vine. It is a chance seedling as it came up in the middle of the box edging. The first leaves had a very rough appearance, and several times I had a notion to pull it out; but fortunately left it, untouched, out of real neglect; and when it became more firmly established I had to bend it down and let it come up more on the inside of the edge, as the branches were too much in the way. The first few berries made their appearance in 1853. Since that time it was mostly left to itself, and it made a rather wild growth until this year, when it turned out in its full strength."

Nearly the same story as with all the best grapes; a feeble growth in starting; a few berries at the first fruiting; afterwards vigor and fertility.

See Frontispiece.*

How many fine seedlings have been thus neglected, and finally destroyed, for want of a little "patience."

But fortunately we *have* the Clara as a precious addition to our still short list of native varieties of great merit. The fruit is tested and stands high indeed. The only thing to be tested is the hardiness of the vine under unfavorable circumstances: but we think that, if *steam* propagation does not weaken the offspring of the parent, they will prove to be just as vigorous, and well fitted to the climate of the middle states. As in all seedlings from foreign grapes, the young plants will require more care and time to come up to the native standards. It was so with the Delaware and still more so with the Rebecca. The only *perfectly* hardy and most vigorous grape vines, seem to belong to the order of the Fox grapes. The more the fruit recedes from that original native type, the more care and attention the vines will require; but that can be no objection to the raising and propagation of luscious grapes. All the most delicate and rich fruits are subject to the same law; and those alone will reap the best crops and the finest fruits, who pay the proper attention to their cultivation.—L. E. Berckmans.

ORCHARD HOUSE PRODUCE.

The following is the amount of produce of an orchard house here for the last four years:

PEACHES.

	1855	1856	1857	1858
Noblesse, 2 plants	19	32	29	38
Seedling Noblesse, 2 plants	43	33	25	34
Grosse Mignonne, 4 plants	54	53	85	68
Early Admirable, 1 plant	42	11	32	7
French Mignonne, 1 plant	24	18	29	23
Bellegarde, 2 plants	67	18	70	19
Barrington, 2 plants	51	26	45	31
Teton de Venus, 2 plants	4	12	14	12
Chancellor, 2 plants	29	48	27	29
Royal George		—	66	52
Bellegarde	20	—	55	64
Trained on back				

NECTARINES.

Elruge, 1 plant	—	6	15	9
Violette Hative, 3 plants	100	70	122	73
Pitmaston Orange, 3 plants	86	67	82	71
Apricot, 5 plants	60	48	12	—
	599	442	708	529

I also find my house useful for many other little matters, such as wintering Cauliflower plants in pots, Auriculas, Roses, &c., as no frost will hurt them if kept dry like the fruit trees. Early in the spring when the trees are put in their places the spaces between are filled with small pots of early Peas for planting out, which often yield a dish 10 days before those sown in the open ground. No doubt there are many other uses to which such houses may be applied, and which every lover of a garden will be always discovering. The house is 21 feet long and 12 wide, and was built exactly as Mr. Rivers directs in the first edition of his book, and cost £25, trees, pots, and all complete.—*The Gardener, Bentworth Hall, England.*

TERRA COTTA ORNAMENTS.

A valued lady correspondent called our attention last year to the *atelier* of Ambroise Tellier, of 1194 Broadway, New York, as a most deserving Italian artist, recently settled among us, and prepared to make ornaments in Terra Cotta, for gardens, lawns, terraces, or halls of entrance, in a style that would be creditable in his own sunny land. We hope our notice attracted the attention of amateurs, some of whom may have benefited by the information.

The material employed is perfectly adapted to a northern climate, being as durable as brick.

Mr. Tellier produces very good statues, and we are much mistaken if his plastic material and his accurate eye will not enable him to take likenesses in excellent style.

At the time we mention, Mr. Tellier favored us with a book of drawings of such articles as he desired to produce, and from this volume the following ornaments were selected and have just been furnished by our excellent wood engraver :—

NOTES OF NEW AND RARE PLANTS.

BY DANIEL BARKER, SPRINGFIELD, MASS.

Fuchsia Princess Royal (Veitch); this is one of the very best of the white corollæ fuchsias ; tube and sepals, scarlet ; corolla, white ; flower of a very good form, reflexing much better than most of the white varieties ; habit of plant very graceful, and an abundant bloomer.

Sonerilla Margaritacea. This is one of the most beautiful of all the variegated leaved plants. It is a dwarf growing plant, with lanceolate leaves of a beautiful dark green, thickly covered with pure white spots ; the flowers, which are produced in great abundance, are of a bright rose color, upon crimson colored stems which rise about four inches from the foliage. Introduced from the East Indies.

Canna Warscewicksii. A sub-evergeen hothouse herbaceous plant, from South America. This is the finest of the genus, which embraces upwards of thirty kinds ; it will grow and flower very freely, treated as a summer bedding plant, placed in the center of a round bed surrounded by yellow flowering calceolaria ; then a row of ageratum celestinum, *pegged down ;* and lastly, by a row of dwarf variegated geraniums,—form a beautiful and very attractive bed.

Bilbergia Liboniana. A very handsome bromeliaceous plant, producing a spike of highly colored bracts, with flowers of a scarlet and purple color, which are very ornamental ; requires the temperature of the hothouse.

Strelitzia Regina. An old but a noble ornament of the hothouse, with a flower resembling a bird's head, the colors of which are a bright orange and purple, lasting in perfection a long time. This is one of the brightest ornaments of our hothouses.

Russellia Juncea. One of the most interesting and beautiful of weeping plants, for the hot or greenhouse. It will hang down from three to six feet below the pot, which should be placed in a hanging basket, or upon a pedestal, for which it is best adapted. Its bright scarlet flowers, which are not unlike the trumpet honeysuckle, are produced in great abundance all over the stems, and when in flower, placed upon a pedestal, with its stems hanging down like a weeping willow, is a most beautiful ornament.

Achimenes Meteor. A most splendid addition to this most beautiful and useful class of plants. Color, a rich crimson scarlet, with petals of great substance. It is, without exception, the finest achimena ever raised.

The best of the present achimeni are A. Behmontia—a very fine and beautiful variety, with very large flowers of a rich deep violet plum color, with a conspicuous yellow blotch in the center which is covered over with crimson spots.

A Leighi. A very free blooming variety, of excellent habit. Color, light purple ; near two inches in diameter, which is beautifully sprinkled with carmine spots. The above two varieties form a fine contrast with the beautiful snow-white blossoms of A. Margaretta and A. Ambrose Verschaffett ; a very fine variety ; color white, picturesquely marked with bright violet (one of the very best.)

A Carl Wolfarth. Very fine purple crimson ; a very beautiful variety.

A Dr. Hopf. White, with a beautiful lilac center.

A Edmond Bossieu. Color white, beautifully veined with lilac; a remarkably free bloomer, and fine habit.

A Edouard Otto. Bright rose; center white, with lilac veins (very fine.)

A Longiflora Alba. Large, white, with lilac veins; an old but a very choice variety. No collection can be complete without it.

A Longiflora Major. The finest blue in cultivation; a superb variety.

A Margaretta. Snow-white blossoms; the finest white in cultivation.

A Sir Trehern Thomas. A magnificent variety; color fine; bright crimson flowers, very large.

Amongst summer flowering greenhouse plants, it will not be too much to say, that the many fine varieties of achimenia are amongst the most useful and beautiful cultivated. It is indeed difficult to conceive anything more beautiful than a collection of those superb flowers when in a high state of cultivation. At no very remote period the achimenia coccinnea was the only one cultivated, but owing to the rapid introduction within the last few years of new and improved varieties, of almost every color, they are now very numerous; and many of them are extremely beautiful, and well worth all the care which may be bestowed upon them. As summer flowering plants for the greenhouse, they are invaluable; their flowers when once developed continue in perfection for several months.

All lovers of beautiful flowers must admit, that under even ordinary care the achimenia may fairly lay claim to that profuseness of flowering which scarcely belongs to any other genus of plants; and to this can be added, brilliancy of color and beautiful foliage.

THE PROFICIENT, THE AMATUER, AND THE PUBLIC.

BY WM. CREED, ROCHESTER, NEW YORK.

The position of the proficient and amateur, may be said to be correlative, and each, to a certain extent, necessary to the success of the other, whatever their profession or calling; and thus each may be materially benefited as well as assisted in the accomplishment of the desires and aims suited to their particular spheres of action; the former ripe with knowledge and justly anticipating, though not always securing pecuniary recompense in a ratio equal to the persevering and enterprising efforts often made through a long series of years, by investigation, study and practice; while the latter is apparently, with a youthful vigor and praiseworthy zeal, endeavoring to attain strength and manhood more for gratification than emolument, and often with a generous inclination enters the ranks with a determined energy worthy of notice and imitation. It will not then, from this inference, be difficult to understand the position of either the proficient or amateur, and the public being placed in juxtaposition with both; the machinery is before us, and whatever results may be anticipated will depend upon its perfect working.

It may be asked by some, how in the personal absence of the proficient, can his services best be secured in the case of horticulture and its concomitant branches? The answer is, through the press; let us encourage it, be co-workers one with another, and let the streams of knowledge, gushing forth from the fountain heads, be made accessible to all. We now come

more directly to the point we wish to impress upon the reader's mind, and that is, to encourage a desire in public estimation, by more strenuous efforts for the onward march of horticulture, &c., by a full dissemination of its literature, public discussions, meetings, and shows, and so managed as to fix an interest that shall not flag, thus bringing to the cause many thousands who are now indifferent to its importance and value as a delightful study; for what else can ensure gratification and pleasure so diversified and elevating in all that is good and noble during our leisure hours, and which would be a sure step to eradicate that ennui too often existing in portions of the community, and not only have a tendency to relieve the mind from the burdens of every day life, make us more domesticated and less liable to give way to assumed, unsubstantial pleasures, so eagerly seized to "drive dull care away."

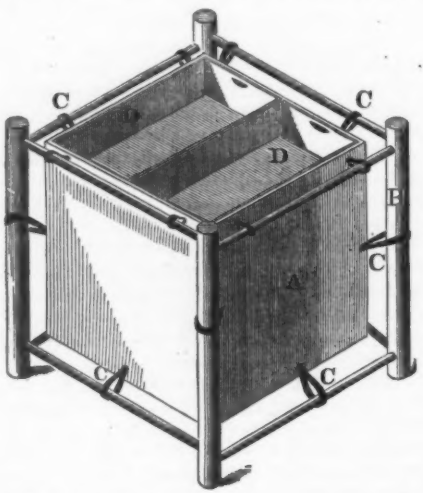
Proficients, let your motto be to encourage the amateur; and the amateur to interest his neighbors, let what may present itself to the discouragement of either, and you will be public benefactors.

May the year 1859 be signalized by the commencement of a new era in the tendency to promote a general study of Nature's wondrous works in this direction, and thus help to make

"Earth an Eden!"

TRANSPORTATION PROTECTOR.

This cut of a valuable invention appeared some months since in the American Agriculturist, and has been furnished by our request by Mr.



Henry B. Osgood, the inventor. At the suggestion of fruit growers Mr. Osgood now makes them in any quantities that may be desired. Dr. Ward

of New Jersey, George W. Chapin of Providence, T. S. Gold of West Cornwall, and others, have employed them to satisfaction. Strawberries, with a few leaves over them and the covers well secured, keep their bright color better than when sent in any other way. All who have employed them, we learn, speaks decidedly in their favor. For carriage, for long or short distances, we have no doubt they will be found very advantageous.

Dear Sir :—My spring frame for packages, or Transportation Protector, for which letters Patent were granted to me on the 4th of November last, is designed to protect fruits, and such things as are easily broken, or damaged by being bruised, during the process of transportation, storing and handling ; and more effectually and easily than can be done by the ordinary means. In Fig. 1, of the drawings, A is a basket, or may be a box, or any other suitable vessel or receptable to contain the articles to be transported ; B is the protector frame, and C is the elastic fastenings by means of which the vessel A is combined with the frame B, so that in whatever position (when secured by a cover) they may be tumbled upon the ground, floor, or vehicle of conveyance, the vessel A, with its contents, is supported within the protector frame ; the frame B, being enough larger than A to project on all sides, so as to receive whatever shock or jar there may be ; and the elastic fastenings, C, prevent the shocks or jars being transmitted to the vessel A. These elastic fastenings may be rubber bands, or of any other convenient form, or material.

The form which I suppose will be most convenient is, to have the vessel A, cubical, or nearly so. If the load to be transported is very easily bruised, as strawberries, raspberries, and the like,—where lower ones are liable to be crushed by the weight of those above—they should be put in shallow boxes, which are made to fit into the cubical one, and which will hold several of them ; these shallow boxes may be of 1, 2, 3, 4, quarts each, or any other convenient size. When the load to be used does not require the shallow boxes, the protector may be used without them. For bouquets, and other light articles, I propose to make paper boxes with bands of tape looped at suitable places to receive the elastic fastenings.

Whitinsville, Worcester Co., 1856.

FACTS IN GRAPE CULTURE.

BY JOHN B. EATON, BUFFALO, N. Y.

In the remarkable scarcity of hardy fruits which prevailed the past season, I have found the culture of the grape under glass to possess unusual interest, and have devoted to it much more attention than I have heretefore done, for which I have been rewarded in a very satisfactory manner, by a better crop of fruit than my vines have ever before produced.

Having never been an adherent of the "slaughter-house system" of making borders, mine is chiefly composed of vegetable mould, with a moderate admixture of stable manure, bones &c. In this my vines make fine wood—sufficiently large, round, firm, and short-jointed.

My practice is, to ventilate freely throughout the season, (except, of course, when the outside temperature is too low,) and in this respect differfrom some of my neighbors, who implicitly follow Chorlton's directions (which

doubtless answer perfectly well for his latitude,) and keep their grapes upon a short allowance of air until late in the season. The consequence is, that their vines grow late, fail to mature their wood perfectly, and are in no condition to withstand the intense cold to which they are occasionally subjected. Indeed, in some houses the vines have been killed to the ground. My vines ripen their wood early, and are apparently not injured by the cold air in the slightest degree, although my vinery is not one of the warmest, being far from air tight.

My crop of last year suffered much injury in consequence of my having been prevented, by illness, from thinning the berries at the proper time. Many of them necessarily ripened imperfectly, and failed to acquire their proper size and form. A few days of cold rain occurred just before all the sorts were fully colored, and produced cracking and rotting to such an extent that very many of the bunches were ruined. In view of this, I have this season thinned with severity both bunches and berries, for which I was well repaid by the superior size and beauty, as well as higher quality of the fruit, although the weight of the bunches was somewhat reduced. Under this treatment, the Grizzly Frontignan in particular proved much finer than usual. I had considered it rather a small grape, but some of the berries measured fully $\frac{7}{8}$ inch in diameter, and the peculiar color and flavor were well developed.

Regarding the Chasselas Musqué I have a retraction to make, in which I take great satisfaction. I some time since remarked that I could not grow it without its cracking. This I revoke, as it has this season produced both bunches and berries of good size, and so very few of the latter cracked, that their removal rarely caused any perceptible vacancy. I am not aware of having practised any peculiar mode of treatment which could have produced this result, and am inclined to attribute it to the greater prevalence of warm and dry weather this season. An improvement was also visible in the Black St. Peter's, although it has not yet become one of my favorite varieties.

With the White Muscat of Alexandria my success was so decided as to excite considerable remark among those of my grape growing friends who visited me. My bunches, instead of being loose, irregular and straggling, as formerly, were of fine size and form, the berries well swelled, and so thickly set that in several instances a free use of the scissors was requisite to their proper developement.

Chasselas de Fontainbleau and White Frontignan were very good, but Black, and Wilmot's Black Hamburghs, did not color quite so perfectly as last season, from what cause I am unable to determine.

My vinery has been quite exempt from mildew for two years past, I having taken the precaution of placing in it, soon after the fruit set, two or three shallow boxes, each containing sufficient sulphur to cover the bottom to the depth of half an inch or more. This being occasionally stirred, to preserve its friability, proved a perfect preventive, and is not only a far neater, but much more economical method of using it than that of strewing it about the house, as it loses no appreciable part of its bulk during the season.

I have been pruning my vines, for the past year, upon the plan described by Mr. Chorlton as the "double spur system," which pleases me much. I prefer it in many respects to the ordinary "close spur" method, and it ap-

pears to me much more in accordance with reason than the latter plan of reducing the vine to "walking-stick" dimensions at each pruning.

When building my vinery, some years since, I was strongly advised by an experienced grape grower to furnish it with the so-called "anchor" trellis, as by far the best in use. This I now regret having done, for the curved form of the supporting irons and the near proximity of the parallel vines render it extremely difficult to prevent the spurs from coming in contact with the glass, and the foliage being consequently burned. Of this there is of course much less liability when the training wires are more widely separated and at equal distances from the roof, as I should arrange them upon any future occasion.

I am of opinion that considerable benefit was derived from a mulch of partially cured hay with which my outside border was covered during all the driest part of the season. Being applied soon after a rain, it preserved such a degree of moisture in the border, that I did not find it necessary to apply water outside during the remainder of the season, notwithstanding the drought that at times prevailed.

I last year mulched the inside border, but do not think it advantageous, unless during the first season, and before there is sufficient foliage to shade the soil.

With the exception of a few colonies of vine-fretters, which were extirpated with little labor, and an irruption of large, hairy caterpillars, which gave me some trouble, I have been annoyed by few insects. A few wandering grasshoppers, and a solitary mealy-bug, I think, comprise the remainder of the list of depredators.

I have received your number containing such a very flattering allusion to my views, by my friend Professor Coppock, that I cannot allow myself to appropriate it in silence. My house is very far from being "the *finest* of that form (the curvilinear) put up here." If the Professor had said "the *first*," as I suspect he intended, it would have been in accordance with the fact. As the eminence of "a model of skill" in grape growing is not to be attained in five years, the mention of the fact that such is the extent of my experience, will be a sufficient disclaimer of the fitness of the application suggested by Mr. Coppock.

I am under obligations to Mr. J. F. Allen, for the particularity with which he has replied to my inquiries.

SCIENCE vs. PREJUDICE.

The May Apple.

BY J. STAUFFER, LANCASTER, PA.

While on a visit to a relative, one of our practical German farmers, a man of good common sense and a close observer, I found that he entertained peculiar prejudices against horticultural journals, and what he called, book-farming.

He evidently seemed to consider those men who exercised their brains and pens to disseminate useful information, as "idle fellows," whose object was to tax the farmer indirectly, by imposing their speculations upon him in the shape of a subscription, deeming it presumptuous in such who never held

the handle of a plough, (however well they might handle the pen,) to undertake to teach and theorize about matters upon which the farmer is daily employed.

My favorite pursuits of collecting plants and insects for my herbarium or cabinet he ridiculed as a waste of time, without any practical utility, wondering what on earth I wanted with those "weeds and bugs."

Piqued at this "*cui bono?*" respecting botany and entomology, I entered warmly into the vindication of science generally, as bearing on agriculture and horticulture more particularly.

I endeavored to impress him with a view of the vast importance that even a rudimental knowledge of vegetable physiology, geology, chemistry, or even entomology, exerted in promoting the best interests of the agriculturist: assuring him the art of cultivating the soil intelligently, required more than a mere knowledge of ploughing and seeding; that in order to keep the soil in good condition, by a judicious manuring and rotation in the crops, involved a knowledge of the organic and elementary principles used in nature's laboratory, not acquired without much reading and some study. Further declaring that the old routine of plodding along ignorantly, actuated by the mere force of habit, was fast giving way, and the drudgery of farming becoming elevated to a profession based on scientific principles.

Thus I almost persuaded him to subscribe to one or more of the numerous journals and papers devoted to the subject, believing as I do, that an investment of a few dollars in that direction would prove a source of profit, by yielding him compound interest twice told.

Somewhat modified in his views, if not thoroughly convinced by my arguments in favor of book-farming, our conversation was interrupted by the entrance of one of his boys, with a long face, expressive of some bad tidings to tell, which arrested the attention of my kind host, who received the unwelcome intelligence that one of his favorite horses was sadly foundered. He repaired to the barn-yard with hasty strides—I mechanically followed the lad, whose motions were less impulsive. There stood the horse, with drooping head, evidently in a bad state, while my uncle, with a perplexed look, slowly walked around the animal, evidently puzzled to know what to do in his dilemma; so he scolded the boys, and finally appealed to me for advice.

I briefly related to him the account given by Dr. Stephen Burgon, of Bucks Co., Pa., published in the third volume of the "Medical Recorder," in which he states that while on a tour out West, in 1814, his horse became foundered, and was cured during the night by having him drenched with several gallons of a strong decoction of the May Apple root. "Now uncle," said I, "as the root is abundant here in your woods, you can avail yourself of the *doctor's experience*, and have the benefit of *my reading*, if you choose.

Perfectly willing, we speedily collected about two pounds of the fresh root, sliced it, and put it into boiling water to steep for half an hour, and then drenched the horse thoroughly—it proved an excellent purge, and by next morning the animal was so far recovered as to eat with a good appetite, and speedily regained his usual health and activity.

This gave such satisfaction to my host, and so excited his curiosity to know all about the May Apple, that I am induced to write out a brief notice, accompanied with one of my own wood cuts, for his and others' benefit.—[Which shall appear in our next.—Ed.]

ROOT PRUNING TO PROMOTE FRUITFULNESS.

BY WILLIAM SAUNDERS, GERMANTOWN, PENNSYLVANIA.

Fruit trees are planted with a view to produce fruit, and all the labor of the cultivator, after the trees are planted, has this primary object in view.

But how best to attain this result is a question of difficult solution; if the soil is favorable and moderately enriched, the planter will for some years have more wood than fruit. On the other hand, if planted in poor soil, he may procure a few specimens of fruit from his stunted trees the second or third year from planting, but it will only be a few, and the production of these will further arrest growth, and the tree will require a year or two to recover the shock, if indeed it ever attain a vigorous condition.

Availing himself of the results which science has achieved when applied to practice, the impatient planter procures a plantation of (so called) dwarf trees, and again he fails to realize his anticipations. He finds that with all his vigilance he cannot prevent the borer from destroying his apple stocks. His peaches on plum stocks snap asunder at the junction, with a fine crop nearly ripe. His pears on quince die out by degrees without any apparent cause. Humbled by his losses he applies to high pomological authority for advice, and receives it. He is told that his course of culture was wrong. He applied nitrogenous manures when carbonaceous only were wanted. He should have treated with phosphates instead of ammonia.

Turnips should have taken the place of his carrot crop between the rows of his trees. He committed a fatal error in mulching his ground, or, if opposed to mulching, preferring to keep a cultivated surface, his trees were no doubt injured by continued cultivation, and a slight mulching of tan bark would have probably saved them, and, that the finest pears as well as other choice fruits, are as easily produced as cabbages. And thus he is silenced, if not convinced.

The above is no exaggerated picture, although it might well be taken for such; all this has occurred, yet we know that the finest apples have been gathered from dwarf trees, that peaches have lived on plum stocks for thirty years, and that pears on quince roots have proved healthy and productive for an equal period; but the fact still remains, that success is very uncertain, even under the best treatment, in the culture of plants that are grafted upon stocks of weaker growth than themselves.

The object in doing so is to weaken and reduce the growth of wood, and it is but reasonable to expect, that an occasional case may occur where this proves too severe.

I have long been convinced that root pruning will ultimately supersede all other methods of inducing fruitfulness in trees, but not until we become convinced that fine fruit cannot be produced without skill and labor.

It is now nearly twenty years since I received my first lesson in root pruning. A row of plum trees that for many years flowered annually in the greatest profusion, but whose excessive vigor of growth invariably starved out the young fruit, so that it dropped as soon as formed, were operated upon. A circular trench was dug out about five feet from the stem, and as deep as the lowest roots; all the roots met with were cut, and all perpendicular roots were also cut as far as practicable without breaking up the

ball thus formed. The soil was replaced, and without further care these trees afterwards produced yearly a heavy crop of fruit. I have often had occasion since to witness similar results. A few years ago I root-pruned a row of Nectarine trees trained on the inside wall of a cold grapery; previous to that they rarely produced a fruit, and I believe they have not failed in a good crop since.

Entire control over the roots is the great secret of success in the growth of flowering plants. Florists are well aware that a Geranium will flower most profusely when the pot in which it is growing is well filled with roots. The same principle is recognized in growing fruit trees in pots, and immense crops are produced.

The operation is so simple and the expense involved so very slight that no objections can be made to the system in that respect, and I would strongly advise those who have not been successful in growing pears on quince stocks, to plant healthy trees on pear roots, as I can confidently assure them that they can get fruit as early, and with much more certainty, if they adopt this method of culture.

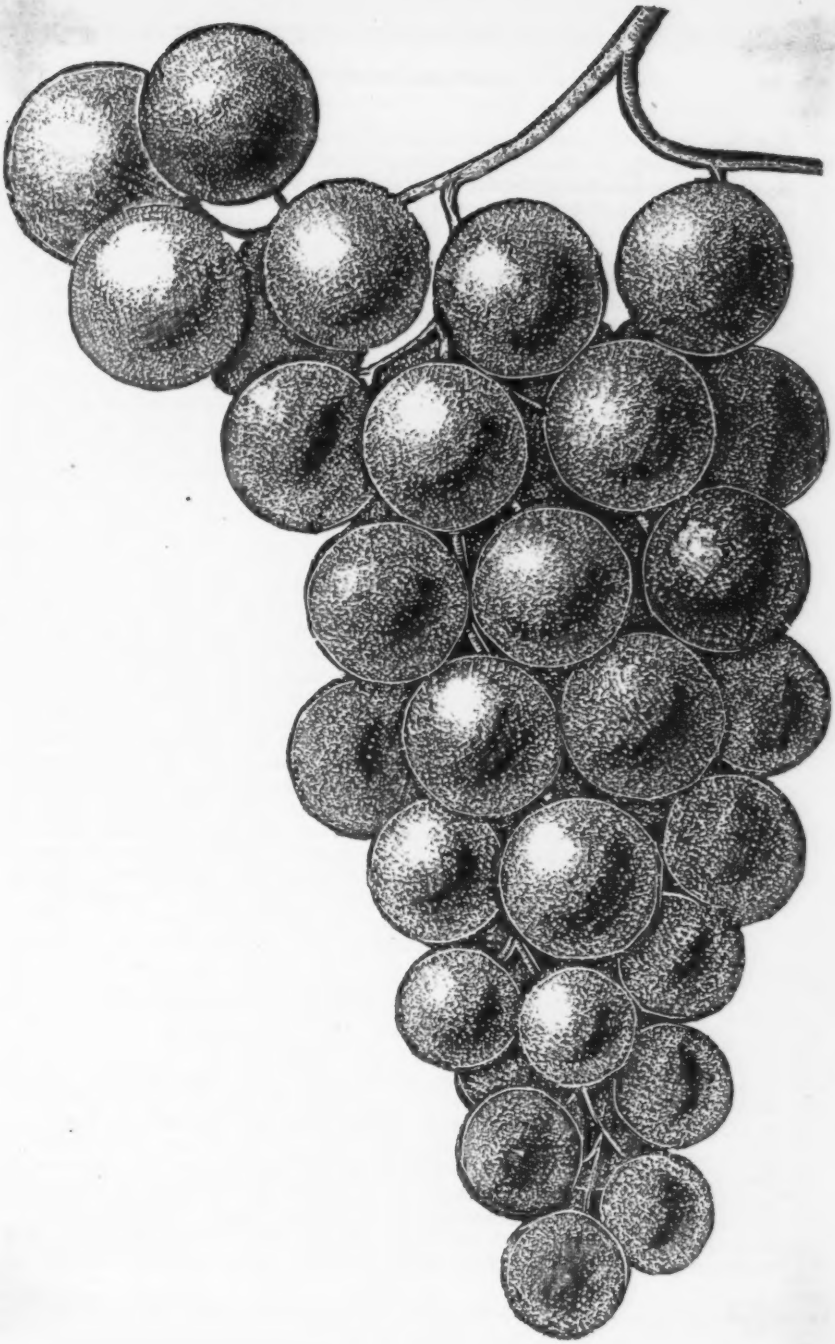
ONTARIO GRAPE.

The above-named grape was sent me from the south bank of Lake Ontario. The berries which I sent you were but a small part of a cluster; the whole would have weighed over a pound. It has been but very little disseminated as yet, and so pleased me that I secured the whole stock. Bunch, large; berry, the largest probably of any grape in the world, some berries measuring a quarter of an inch in diameter; quite round, black, thin skin, buttery; quality good, but not very sweet; said to be a good bearer, a strong grower, and hardy. My vine grew very well the past summer, and showed no signs of mildew, and ripened its wood well. The original vine is supposed to be fifteen years old, and in possession of a man who could not be persuaded to give away a single cutting, until by a little strategem and $1 50 per cutting, a few were obtained, from which the present stock has been grown. I send an amateur's wood-cut. S. Miller.

CAN PEARS BE PROFITABLY GROWN FOR MARKET?

BY LEWIS F. ALLEN, BLACK ROCK, NEW YORK.

The article, under the above title, in the May number of the *Horticulturist*, will be readily remembered by those who take an interest in Pear culture and gave it the favor of their perusal. I supposed that a question so plainly asked, and the statement so naturally made of my own experience, and the observations upon the labors of others which came under my own eye, might, perhaps, draw out some facts in relation to pear culture in different parts of the country for the last dozen years, accompanied with statistics of the bearing of the trees, their present condition, the prices obtained for the fruit, and other data tending to throw some light on the present condition



of our American pear orchards, and proving, if possible, whether "Pears can be profitably grown for *market*," or not. But my opponents adroitly *shy* that very pertinent question, and substitute one of their own, which I have not denied; to wit: whether pears, including dwarfs, can be successfully grown at all? They shall not, with my consent, make issue with me on the latter.

Although eight months have passed since that article appeared, I have not heard a single response touching the *facts* I wished to draw out, or proving that a pear *orchard*, either standard or dwarf, of any considerable number of trees, could be *successfully*, *profitably* and *permanently* grown in any part of the country "*as a market fruit*," to say nothing of the price the fruit had cost the producer, or the quantity marketed. No, not a single one giving a straight-forward answer to my questions. But I have seen any amount of criticism on my own short-comings in the cultivation and treatment of my own trees—not however, by any number of those who had ever seen them when living—and an almost universal judgment on the part of the writers that neither pears nor any other fruit can be grown on the bleak, exposed territory "at Black Rock," "Grand Island," or "the East end of Lake Erie,"—coupled, in sundry instances, with abundance of *personal* remark and covert spite, much more satisfactory to the authors than edifying to the public. As this last, however, is more a matter of individual taste on the part of the writers than connected with the subject, it need not be discussed. Coming from the sources that it did, and understanding well the motives which dictated it, it has been matter of little surprise, and of still less anxiety to myself. Others, too, seem to think it presumptuous to doubt the supposition so universally received for years past as gospel truth,—that pears, more particularly dwarfs, can be made profitable for market culture, when so repeatedly asserted by fruit conventions held, for some years past, throughout the country.

Such being so, I perhaps have been presumptuous, possibly very ignorant on the subject; may be my own eyes and ears have borne false witness to my convictions; yet having read attentively, for thirty years, most of the agricultural and pomological publications printed in the northern states, and attended more of the great State and national fruit convocations than I can now enumerate, and seen their exhibitions of fruits, I still have an idea that my opportunities of drawing conclusions have been as fair, and quite as *disinterested* as some of those who either criticise me in candor, or assail me with personalities.

The positions taken in my May article were, mainly, these: 1st. The pear, as a standard fruit, on its own stock, is capricious in its selection of soil, climate, and position in the United States. As the consequence of this, its success has been various—good, bad, and indifferent; and although it refuses to grow and bear at all in some localities; or barely exists, and yields fitfully in others, it succeeds well in many, and when so, is a profitable fruit for cultivation; and in soils and localities where it will succeed, I recommended its cultivation. 2nd. The dwarf pear worked on quince stock, is equally uncertain, but more capricious, less hardy and reliable in life and bearing, from the fact that its union with the quince is unnatural and imperfect, and requires *quince* cultivation, to which but restricted portions of our soil and climate are adapted; and when successful, which I freely admitted it to be in certain localities, evidence was wanted that its

cultivation will *pay*, as a *market* fruit. I also recommended the dwarf in garden culture for family use, wherever it will succeed.

To elucidate the above propositions, I related my own experience fully, frankly, and truly. I also related the experience of my neighbors, and that of others not my neighbors in other good fruit localities at a distance from me, as I personally saw and had it from the lips of the cultivators themselves. In addition to this: 3rd. I questioned the correctness of the conclusion that many persons would arrive at from hearing statements of the enormous profits of fruit culture, based on extraordinary crops in particularly genial seasons, from individual trees; and asserted that such statements afforded no true test of the average profits of their bearing. I have had just such extraordinary crops myself, and have seen such on the trees of my neighbors; but they were seldom in occurrence, and many years might be reckoned in which they bore no crops at all.

These were my propositions, coupled with some collateral remarks running through my "four or five page" article, which some of my critics complained of, as being "little to the purpose." I might also have stated the fact, that after the warmest recommendations, years ago, by the conventions and periodicals, to cultivate all kinds of pear on the quince, it was soon ascertained that but a limited number of varieties would flourish, or grow at all, as a dwarf. These varieties were afterwards, from time to time, still further restricted at the fruit conventions in each succeeding meeting, until now the hardiest advocate of the dwarf will scarcely name a dozen well-known kinds which he would risk in any considerable number of trees, *as being reliable on the quince, at all.*

Now, it would naturally be supposed, that amid all the sharp criticism which has been written on my article, some inkling of what I had called for, viz., *statistical* information *to the point* would have been submitted; but not an item of the kind have I yet seen. Various statements have been made that in such and such places flourishing young dwarf trees, and even orchards planted, have borne good crops of fruit, have sold for good prices—none of which, by the way, I ever denied—but they gave no *pecuniary results* as to "profits." We know not whether the fruit *cost* fifty cents, or a dollar a *bushel* to produce it, or a penny, sixpence, or a shilling each for the individual pears, nor do we know whether the profit, if any, be made by the producer, the forestaller, or the huckster. We are told how beautiful the growing trees look—as if I had ever disputed that fact! and, as a matter of course, that I had slandered pear-growing, particularly dwarf, without any sort of reason. Nor is it of the slightest consequence to the merits of the question whether my own individual mode of cultivation was good or bad,—successful or not, so far as the *fact* that they have been successfully cultivated by others is concerned.

I want simply to know *who does* succeed in growing good table pears "for market, at a profit," and where the orchards are located. *That* is the point, and the point only; and until my question is answered by statements of figures and facts, my position stands unrefuted. "Millions of trees" have been reared, sold, and planted all over the country for *quite* a sufficient number of years to bring them into successful bearing; and where are the results, either in living trees, fruit, or money?

Let us see: In the last June *Horticulturist*, page 250, Rivers, of Sawbridgeworth, has an article on the Dwarf, and names six varieties which he

recommends for dwarf cultivation. He has great orchards, but gives no *facts* of their profits, or bearing; and as Rivers is English authority, based on English soil and climate, it is, in any result, no guide to us in America.

In the same number, page 288, a gentleman in "Southern Ohio" says he succeeds in pear culture, and gets three and four dollars a bushel for his fruit. "*I think* with us here, pear culture will pay." Not a single statistic about details—*proving* nothing to the question propounded.

In July number, page 319, my friend John B. Eaton walks up to the witness stand. "Has grown Dwarfs thirteen years; planted 400 trees of over 100 varieties; a great many have died with blight, and don't know what; probably *worked on an unsuitable stock*, the *common* quince." Now here, at this "*unsuitable* stock," let me stick a pin. A quince is a quince, and nothing else. It is declared by my excellent friend, John J. Thomas—and I always distrust somewhat my own correctness when differing from him on pomological subjects, when his prejudices do not get the better of his judgment—that the fact of the quince being a smaller and more compact growing wood than the pear, is no objection to their forming a healthy and perfect union when worked upon each other; in which fact I do, *toto cælo*, disagree with him. Therefore, if friend Thomas is right, no matter whether it be the "common" quince, or the larger "Angers" which is used for a dwarf stock; being a quince, the pear worked upon it should grow as well on the smaller as the larger stock. So here Mr. Eaton is in my favor, although ignoring my theory in general. He does not give the number of his trees *now living*—not at all; but tells us *he thinks* they can be grown to a profit. I will add an item or two to his statement. I never saw trees better cultivated than his, ever since his father planted his first dwarfs. *They could not be better cultivated.* I know every foot of his orchard grounds, the different qualities of the soil, and have seen the trees every year since planted. I venture the assertion that his *Dwarf* orchard—although he has some fine trees yet standing—in profits and success, *as a market pear*, is a failure. Again: what does he mean by saying that "if he was now to plant a pear orchard, he would arrange the rows in quincunx ten feet apart, placing *standards* at about fifteen feet, and filling the alternate spaces with *dwarfs?*" Why, simply, as I understand it, that expecting the dwarfs to die out by the time the standards get up to bearing size, as they no doubt would, the standards will then fill the ground! Fifteen feet apart for standards! Why, he must have precious little faith in the standards even, for sizeable trees when at maturity ought to stand full twenty-five or thirty feet asunder. He probably expects three quarters of the standards to fail, ultimately, and the remainder will be just right in distance. Mr. Eaton is a damaging witness for the dwarfs, and I will set him over on my side of the question.

But I have to go beyond the pages of the *Horticulturist* to hunt up testimony, either against or for myself. So, in the "Country Gentleman" of July 22d, page 46, Doctor Ward, of Newark, New Jersey, occupies a page. As usual, he makes many candid and sensible remarks drawn from his own actual experience, as well as observations on the labors of others; and had I not found him a short time previous giving countenance to slanders, which he ought to have known at the time were uttered by perfect ignoramuses upon my May article, at the "Farmer's Club" in New York, I should have thought him a little less credulous than now. Doctor Ward, however, mainly sustains my positions, by inference, at least—and if every

writer who really *knows* any thing on the subject would be but as fair as he, we might arrive at the truth after a while. I cannot quote him fully, nor need I, as any one wishing to know his opinions can read them for himself. I applied the word "credulous" to Doctor Ward. He is more than that—witty, even, upon my statements: "The experience of our friend Mr. Allen has taught us on this point at least one fact, that the climate of *Black Rock* is so uncongenial, that further trials need not *there* be made. There the bleak winds from the lakes, sweeping with almost tempest fury over exposed situations, gives such an inclination eastward to the very trees themselves, that could they speak you would hear them say, '*we would run away* if we could, but as we cannot, we must stop here, bearing no fruit, and die.'" As a sample of badinage, or the facetious, this is well enough, but as matter of argument it is beneath him. I will tell Doctor Ward, if he will come to Black Rock, or Buffalo, I will show him in several different gardens and grounds as fine, thrifty and fruitful dwarf pear-trees, and which have borne as good *occasional* crops as he ever saw elsewhere, even in the genial, *windless* climate of Boston,—that Paradise of the dwarfs. But of the "profits" of the fruits of these Buffalo trees, whether they cost two or twenty cents apiece to their happy owners, I say nothing. I will also show him as well-grown pears on standards, and fruits of all *other* kinds common to the latitude, except the peach—and even the peach ten miles down the Niagara; yes, on the "bleak northern shores of Grand Island," as he ever saw in Jersey.

Indeed, I cannot let Doctor Ward off so lightly. He is so good a witness for me, that at the risk of prolixity I would further quote him.

"Of the pear, as a remunerating crop, I still prefer, as I have ever done, to say but little. Many have been misled by extravagant statements on this subject. The trumpeting of solitary instances of great success in cultivating; the enormous yield of some old tree occupying a favorable locality; the extravagant price that under fortuitous circumstances was realized from the crop, being made the basis of a calculation as to what would be the returns for an acre, misleads by producing impressions experience will rarely confirm.

"Hence the importance of just such testimony as we have from Mr. Allen.

"The question is still a mooted one, whether the growing of pears can be made profitable at the present price of labor, unless much of the work can be done with a horse. To avail one's self of this, the tree must have some other than a pyramidal form. Horticulturists are urged on every side to go into the growing of fruits on an extended scale, stimulated by the promise of large profits; but not a word of caution is uttered as to the form of the tree adapted to the orchard, with the view of abating the cost of its cultivation; and hence the *pyramid*, so beautiful, so appropriate to the garden, is transferred to the orchard. Mr. Hovey's beautiful rows of *Dwarf pyramids*, captivate the eye, but the annual expense of forking the ground—with the repeated hoeings to eradicate the weeds, is a shade in the picture that escapes observation. Nothing probably at the present crisis is more needed than some carefully conducted experiments as to the comparative cost of culture of the pyramidal and half standard form of tree."

Of the wholesale vituperation upon myself, and equally wholesale laudation of the Dwarf pear by the nursero-pomological editor of the Rural New

Yorker, written under the prompting of the "largest Dwarf pear nursery firm in America," I need but remark that any amount of denunciation may be expected from that quarter. Nor do the enthusiastic statements of the neophytes in pear growing of that neighborhood—the most favorable fruit region, perhaps, for the general fruits of the climate covering a limited territory, in North America—help the matter. The latter are but beginners, verdant in experience as the lovers of their young orchards. I admit all they say of their thrifty trees; but of the *fruits*, and the "profits," as yet derived from them, they wisely say nothing. I hope to hear good accounts of them hereafter. If the dwarfs will yield a profit anywhere, it *ought to be* in and about the Genesee valley.

Another man—Mr. Field, living on Long Island, who wrote a book* on Pear Culture, a while ago took particular pains to assail me personally in the New York Tribune, to establish his theory. I could show some precious extracts of volunteer letters which I have received from those familiar with his experiments in "Dwarf" culture. Not a solitary fact did he establish of "the profits" of pear growing.

In subsequent numbers of the *Horticulturist* we have the testimony of F. R. Elliott, an experienced nurseryman and pear grower for many years, in Cleveland, Ohio. I was told, not three months ago, by a gentleman who is the proprietor of a large peach orchard and vinery near that city, and who has been eminently successful in the profits and perfection of his fruits from them, that he had tried more than a thousand Dwarf pears, and after the utmost pains-taking, and the best cultivation, they had utterly failed. So with Mr. Huidekoper, of Meadville, Pennsylvania, all sustaining my views. And here I will mention that I have received several letters from different parts of the United States, written by gentlemen before unknown to me by name, who have tried the dwarfs faithfully and well, as they state, and utterly failed in success, thanking me for the courage I had shown in daring to deny the stories so industriously put forth by many of those engaged in propagating the trees. But the crowning judgment which was to chastise my temerity effectually and forever on this momentous topic, was reserved for a meeting of the "American Pomological Society," holding its biennial session in the city of New York, last September. It was an assemblage of good spirits—of the savans, the philosophers, the amateurs, the nurserymen of the country. On taking the worthy President's opening address in my hands, which I received in a neatly printed pamphlet within twenty-four hours after it was delivered, I found that my pear article in the May *Horticulturist* had even troubled the equanmity of Col. Wilder, a gentleman for whom no one has a higher personal regard, or a more profound respect for his pomological labors and attainments than myself—and eleven pages of that excellent document were devoted to the discussion of the Pear and its "profitable" cultivation, particularly the Dwarf, and in which the oft and long told catalogue of one and another man's pear trees and successful bearing, is repeated. Now I submit, in all humility, that it is an unequal battle, to draw up in such formidable array the luxuriant plantations which decorate the heights of Dorchester, the vales of Roxbury, the plains of Brookline, the gardens of Watertown, and all the "hill country" round about Boston, where pears, like their own "cod fish and pumpkins,"

* Pear Culture; a Manual for the Propagation, &c., of the Pear Tree. By Thos. W. Field. New York: A. O. Moore.

in State house and on steeple, are a long-time Institution, in one solid battery against an obscure adventurer of the back country, in the field of controversy, like myself. Yet such has proved the fortune of war with me and my poor endeavors, like many another vanquished hero in war and argument.

This address no sooner over, the Society went hotly at work discussing the subject both to the length and depth of its merits; and what sort of work they made of it we will see.

I have, at hand, two very full reports of the discussion on the pear,—its varieties, cultivation, and results,—together with the names of its participants. One is in the *Horticulturist*, the other in the "Rural New Yorker," whose "reporter," if his own assertions are to be taken, *never makes a mistake*. These two documents, although differing in some minor particulars, give us probably the upshot of the remarks on that occasion; and to arrive at an approximation of the *correctness* of their conclusions, it is only necessary to say that quite four-fifths of those taking part in the conversation were either those who grow dwarf pear *trees* for sale, or were directly interested in the sale of trees throughout the country. It is scarcely necessary therefore to say that the dwarfs "had it" on nearly every vote, "without a count." Yet, in examining the opinions thus offered, it is easy to one familiar with former proceedings of the same body, to see that many opinions and fruits previously "set up" and established as law, were most summarily "knocked down," and thrown aside as "fogyish" and absurd. For instance: "Mulching," which a few years ago was the panacea for all ills of condition or growth to which most of our fruits, from a strawberry to a pear, particulary the dwarf, were heir to, was now as decidedly condemned as it had been in past time commended. Some grew pears in grass,—my unpardonable sin, although the earth was kept open, and manured, and spaded for several feet around my trees—with entire success, and they disliked plowing and spading as cutting off the fibrous roots; while others insisted that grass was fatal to all good treatment, and bearing, and nothing but "the shovel and the hoe" was permissible in "perfect culture." One fruit which was perfect and "best," a short time since, was now cast aside as "cracked," and "blighted;" while another which "promised well," and with such indorsement had been sent by the propagators and dealers broadcast over the country, was now emphatically discarded. And so, throughout the chapter, confirming all my own written opinion that the pear is capricious in its soil, position, climate, and treatment,—particularly the dwarf.

The *ipse dixit*, too, of the Society upon all doubters, past and future, according to one of the reports before me, stands thus recorded:

"The President said, all who had spoken thus far were in favor of pear culture and of dwarf pears. If there was *another side* in this Convention he would like to hear from it. After some moments of suspense, no one responded to this invitation.

"Silence gives consent." There's a decision for you, fogies and pear croakers; and who dare question the *argumentum ad hominum* of such a dicta! Here is another, both wordy and windy enough:

"It is useless to charge failures to climate, for there is no climate in the world superior to ours for growing the pear. To this some of the best Pomologists in the world who had visited this country, would agree. No other fruit can be grown as profitably as the pear, and none is as certain.

The present season we have neither peaches nor apples in Western New York, but our pear crop is fair, as it always is. Much is said about a *proper soil* for the pear. *Any soil that will grow good wheat and corn, will grow the pear.* It *must*, however, be drained for the pear, as it *should* be for the other crops named. *There is no mystery about pear culture—it only requires the exercise of a little common sense.*

"He knew of no case of failure where persons had given to the subject ordinary information, intellect, and care."

Who can doubt the disinterestedness of the source of such expounded law, when laid down by the "Empire" nurseryman of Western New York? Has he or has he not grown and distributed more Dwarf trees; at this moment has he a larger unsold stock on hand than any half score of nurseries put together; and is he a partner in more or less nurseries extending from Rochester to the Mississippi? are questions to be looked after. Hide your diminished heads, you neophytes, who have planted, in all your innocent enthusiasm, your dwarfs by the score, hundreds, or thousands, "on soil that will grow good wheat and corn," and with all your pains-taking, book reading, and ingenuity, seen them dwindling, blighting, and dying year after year, until scarcely one is left to tell the sorrowful story of its fellows; while apple, quince, peach, cherry, plum, and currant, are rejoicing in growth and fruitfulness all around them! What admirable *proof* is here given by *facts* and *figures*, of the abundance of the pear crop in Western New York in the blessed year eighteen hundred and fifty-eight, when the apple crop, for the only season within twenty years' recollection, has been an almost total failure. Will this speaker inform us what has been the current price of Virgalieu, and other "best" pears in the Rochester market during the past bearing autumn; and at what price he will contract to furnish us half a dozen barrels of "Easter Buerrés" on this first day of February?

But, enough of this abortive attempt to reëstablish by bold assertion the Dwarf pear *throughout* the country as a successful and *profitable* orchard, or even garden fruit. As to the general action of the Pomological Society, it has my best wishes in finally accomplishing its legitimate objects; but when its proceedings are permitted to go out to the public as an advertising sheet for the benefit of dwarf pear *tree* propagators, and it sacrifices truth to individual interest, it will be in danger of taking its place among other charlatanries of the day. Its ill success in establishing any thing like systematic rule for pear growing lies only in the constitutional uncertainty of the tree itself, when on its own stock, and the unnatural application of it upon the quince—the strong, vigorous wood of one, upon that of the small, shrubby fibre of the other. It is similar to working the pear on the thorn—years ago condemned by everybody, excepting for the merest temporary purposes—and only preferable because the quince will strike, and take root more readily than the thorn. There is one advantage, indeed, in substituting the thorn for the quince; it is not subject to the attacks of the borer, to which the quince is always liable. We know hundreds of trees, on their own natural stocks, in different and wide-spread localities, growing on undrained, adhesive clays, generous loams, or leachy grounds, two feet and upwards in diameter, fifty to two hundred years old, stalwart as oaks, bearing twenty to fifty bushels of seedling pears nearly every successive year, amid neglect, and even abuse, where now, in the same, or in con-

tiguous enclosures, with the most pains-taking cultivation, newly-planted trees of the finer varieties scarcely thrive, and dwarfs refuse to grow and bear successfully at all. But we know few or no *orchards* of such large, ancient trees. Those we name are but the survivors of original orchards, long ago decimated, beyond even the memory of living men, showing that the pear on its own stock is the longest lived and hardiest of all our fruit trees, when it has survived the hazards incident to infancy and early maturity. There is one point gained, however; Mr. Hovey and some other tree propagators conceding that *dwarfs* are only adapted to high "garden" culture!

Again, my unfortunate May article has aroused the ire of another zealous pen, in the last November *Horticulturist*,—that of another Buffalo cultivator. This gentleman, after a six months' oblivious and blissful ignorance, by the aid of a friend, has discovered himself to be the "constitutionally obstinate" individual I hinted at, and incontinently hurls his ambitious rhetoric and tasteful periods at my offending head. To his truthful denunciation as a culturist, I bow in all humility, as the well-deserved punishment for my temerity in pretending to know anything in the sight of such an immaculate dwarf-pear-grower as himself; and had he then stopped, I should have been, as in all due reverence to such authority, silent. But when he seeks to exalt his own success by the relation of facts which he cannot prove, I object. As to the success of his fortunate neighbors in their dwarfs, I prefer they shall speak for themselves. Let us examine this new testimony: "Our coterie" commenced pear culture with a lot of "cheap" dwarf pears from New York, and this lot of "trash" constituted the groundwork of our plantations. But he "got rid of that stock" by sale to others, when the "trash" proved to be good for nothing, and its place was supplied by the "thousand thrifty, well-grown trees" from Ellwanger & Barry,—or did they die a natural death on his own hands? As for mine, they grew, flourished, and bore fruit, or dwindled, diseased, and died, in about equal proportions to the high-priced trees I got from the same nursery that his "thousand" came from, and elsewhere, of the best I could get, until they all proved "trash" alike; while on one side of them stood a thrifty young apple-orchard, and on the other vigorous and healthy rows of orange quinces, with nursery pears on their own stocks, and a vigorous nursery of apples, pears, cherries, and plums, which Mr. Coppock had more than once seen, approved, and praised,—on good wheat and corn ground, too,—*vide* Barry. If he has "some thousands" growing, *bearing* dwarfs in his grounds, instead of the forty or fifty standing in his garden, with now and then a crop, or a part of them that are worth talking about, he can probably show them to somebody, as well as state in figures the sums of money which he actually got for them, with the number of bushels of fruit. I regret that he has called *me* to the stand as a witness; but being there, I freely testify that I certainly saw some excellent crops of well-grown Winkfields, Bartlets, and others on some of his trees last September, as well as some other trees full of shrunken, cracked, and worthless Virgalieus by the side of them, with sundry vacant spaces where still other dwarfs *once* stood, together with dead and blighted trees of the past summer; and to make a clean breast, I venture a "guess" that he has made ten dollars in buying "some thousand" dwarf trees at the nurseries, and selling them to his townsmen, where he has made a single dollar in the sale of his pears. Yet his history of his own

success has been reprinted with evident gusto by sundry pomological editors, who will be deaf to any denial of his statements.

But enough on the defensive. I stand by every word in my article in the last May *Horticulturist;* and although many of the tree propagators have assailed that article with great bitterness, not a single pear *orchardist*, of a dozen years' experience, has to my knowledge denied its general truth. I admit now, as I did then, that we have localities where the pear, both standard and dwarf, do succeed as a market fruit; but such localities are not frequent. The objection that all those who fail do not properly cultivate their trees, is a calumny. Are nine-tenths of those who spend their money for dwarf pears such consummate idiots as to neglect *their* cultivation, and lose their trees in consequence, when they know that on their proper treatment every thing depends, and that with half the cultivation bestowed on them every thing else in the fruit line succeeds? Those who know any thing of the matter by experience will tell a different story. Trees won't grow in grass! I can point out scores of the finest dwarfs, as well as standards, I ever saw, growing on a turf lawn, with only a four or five foot circle of bare, forked earth around them,—trees which bear good occasional crops, quite equal to others in the deeply dug grounds of the adjoining garden.

The truthful and self-evident testimony of Mr. Norton,—not a tree propagator but a pear grower,—scores the like of which can be produced if men will only tell it,—is a convincing proof that I am correct; and I repeat, that when our markets can show anything like a fair assortment of *good* pears at prices less than sixpence to a York shilling,—a price so that a man can sit down and make a feast on them cheaper than he can on the same number of oranges or pine-apples, I shall believe that the millions of dwarf-trees which have been planted in the orchards and gardens of our country have been partially successful, but not sooner, let others denounce me as they may.

This article, like my other, Mr. Editor, will be complained of by *some* people as being tediously long, and entirely discordant to their taste; but the subject is worthy of full discussion, if it be worth anything,—and I now dismiss it by, in all fairness, asking the *proof*, by an exhibit in dollars and cents, of "the profits of dwarf pear culture for market purposes."

ADDRESS ON HORTICULTURE.

BY DAVID THOMAS.

IT is matter of congratulation, that "several citizens of Union Springs, New York," should have had the good taste to print this address. It contains a world of practical observation, and relates just such experiences as are calculated to give a practical turn to every gardener and amateur who loves to work and to observe. We pencilled nearly the entire address for insertion, but our space will admit of only the following bright remarks from a mind deeply imbued by a love of nature, and a *man* who, having passed a life of usefulness, can yet charm by his pen and his converse.

"In treating of gardens, as in describing of circles, it matters not where we begin; nor whether we range first among esculent vegetables, beautiful flowers, or delicious fruits, for all are interesting to the horticulturist; and I would hope that this remark may serve as an apology for any abruptness or irregularity that may appear in this discourse.

Does any animal except man enjoy the beauty of flowers? I presume not, having never seen any indication of the kind, though hundreds of insects regale on their nectar. Our love of flowers must then be considered as evidence of a higher organization; and those who cannot appreciate it, suffering from the want of some phrenological developement, have claims on our sympathy. Yet as organs are said to be enlarged or diminished according to moral or mental training, so many of our friends now shut out, may indulge the hope of rising hereafter to the enjoyment of more glorious objects, and of purer and more elevated pleasures. . . . . .

Pure white, as we see it in a sunbeam coming through a clean atmosphere, is the blending of all colors in certain definite proportions; and when it is impure, a surplus or deficiency of some color must cause it. The colors of most flowers are mixtures. The purples are rarely, if ever, pure, being only the intermingling of red and blue. The prismatic colors exhibited in flowers, however, with rare exceptions, are only *six*, for *green* in Botany, like *black* in Optics, is not considered a color.

The intense blue of some Alpine flowers has been ascribed to the deep hue of the sky that bends over them; but the constant supply of moisture may be a better reason. Finer colors have been observed in some species near brooks in summer and autumn, than on similar plants that stood on the dry banks above them.

Plants subjected to high culture are more apt to run into varieties than those in a state of nature; yet some manifest this tendency even in the forest. Our wild *Phlox divaricata* is found sometimes white, as all once were at Farmer's Point near this city; sometimes almost all red, as below Niagara Falls in Canada; and sometimes almost blue, as in some specimens of our own woods, though pale purple is the more common color. No American plant, however, has assumed such varied hues as the Asiatic tulip. Speak-

ing of it in a wild state, Baber, the Tartar emperor, said, "I once directed them to be counted, and they brought in thirty-two or thirty-three different kinds."

And yet the young florist soon observes with surprise that there is one color (often more) into which no variety will ever run, as if the law were imperative,

"Take any [shade] but that."

For instance, we have no blue tulip, blue rose, or blue dahlia—no red crocus, red iris, or red campanula—no yellow phlox, yellow trillium, or yellow peonia; and none are to be expected. To this rule perhaps the hyacinth comes nearest to forming an exception; and yet I have seen none of a good yellow. Even the famous "Gold of Ophir" (so called) has but little more than a tinge of that color. . . . . .

The winters of western New York are as favorable to herbaceous perennials as those of Philadelphia—perhaps more so—but they are less favorable to half-hardy shrubs. Our heavy loams freeze not half as deep as theirs, owing in part to more clouds at that season—the condensed vapor of our lakes—that obstruct the radiation of heat; and to more snow at the time of our severest cold. Plants that lie snug under this mantle are as safe as they would be in England; and we need only be apprehensive of danger immediately after an untimely thaw. With half-hardy shrubs, however, it is different. Over our snows, winds below zero frequently sweep along; and when spring returns, we often find all *above* the snow line *dead*, and all *below* it *alive*, and in the best condition.

But it is not a sudden and brief severity of the weather, but its long continuance, that proves so fatal; for it is occasionally colder at Philadelphia, at Cincinnati, and at Vincennes, than it ever is at Rochester or Buffalo.

A knowledge of these facts may assist the florist in making his selections. It is not difficult to find hardy plants enough, but a correct taste would prompt him to choose the most varied forms of beauty, and such as would be exhibited in succession throughout the whole season of flower. . .

Some young trees and shrubs suffer much in winter before the wood becomes hardened and well matured. For a long period I have seen the American Spindle tree regularly killed down; and for several years the Chinese Honeysuckle shared the same fate; but the same shrubs now appear perfectly hardy. When newly introduced, such plants generally receive more attention than in after time. They are stimulated by high culture to grow late in the season; and, abounding in juice, suffer in proportion from the cold. Dry substances never freeze. The seeds of melons and cucumbers endure the greatest severity of our climate; but the plants that spring from them are destroyed by the first touch of frost. Neither oaks nor maples would abide our winters if they continued their growth into autumn. Half-hardy shrubs should, therefore, be planted in soils not too rich, and their growth should be stopped in summer, if possible.

Have we a better guide than nature? Her seedlings generally rise among other plants, where they are protected from the scorching sun, from untimely frosts, and from being thrown out in winter. Many a plant which we foster in the greenhouse would do well in the thick shades of our forests, where the branches above them would lessen the radiation of heat, and shield them from freezing winds. But hot sunshine may be as destructive as a cold night. The difference between the climate of the woods and the climate of the open

border is very great; and it may explain why many of our native plants refuse to inhabit our gardens. For instance, who has succeeded with the *Gerardias* in the open sunshine? Or with *Cypripedium acaule?* I have known the last, however, to bloom for several successive seasons in the *twilight* of a broken flower pot, open on the north side.

Some shrubs suffer much from exposure to cold winds. In the open ground the White Antwerp Raspberry has been much injured, while ten rods off, under the lee of red cedars, it has done well. The common laburnum may illustrate the same doctrine. One which stood in a door-yard, exposed to the west winds, was damaged every winter, until a building was erected very near it so as completely to shelter it on that side, and from that time during seven years it has not been injured.

Climate, however, is not more important than soil. The peaty earth and stagnant water of the marsh are not more essential to subaquatics, than sand to the wild lupin; but the limestone lands of western New York are deleterious to many plants that require neither mud nor sand. The *Azalea*, the *Kalmia*, and the *Rhododendron* have declined and perished within two or three years after being planted in the most favorable situations. I regretted their loss, but was not quite discouraged. Having found on the brink of a deep ravine certain plants that grow nowhere else in the neighborhood, such as several kinds of earth moss, some species of *Pyrola* and *Hieracium venosum*, I thought the soil would suit those beautiful shrubs; and I determined to make the experiment. A pit two feet deep, enclosed by a frame of boards, was filled with it, and two fine plants of *Kalmia latifolia* are now in the most flourishing condition, after a trial of four years. Between them stands a *Pontic Azalea* in the deepest green, and it has grown more in the present season than in any five preceding it. . . . . .

Perhaps the best method of training roses of the tall-growing kinds is on pillars. Two years ago I had pieces of scantling, twelve feet in length and three inches by four, planted as posts, first perforating them in five or six places with a two-inch auger. Through these holes the stem of the rose is drawn. As it lengthens this operation should be repeated, from time to time, till it reaches the top,—about nine feet high; and as it depends on no decaying cord or bandage for support, it cannot be blown down by the wind.

To insure the posts from decay, inch auger holes near the ground were bored, slanting downwards, not quite through, and filled with salt. Some persons have used plugs in their posts to keep out the rain; but it is best to leave them open for a time, till the wood becomes saturated with brine. As the salt dissolves more should be supplied,—say two or three times a year.

To obtain a finer display, I have planted roses of different colors on opposite sides of the posts, intertwining their branches. At one, I have the *tea-scented Ayrshire* and *Violet Episcopal*, by way of contrast; and at another, the *Baltimore Belle* and *Queen of the Prairies*. I have sixteen posts of this description, and have obtained, expressly for this purpose, a sufficient number of tall-growing kinds. Further experiments are wanted, however, to determine what sorts can most fitly associate, and what shades of color will harmonize the best.

Of all the insects that annoy the florist, the rose bug ought to stand first on the list. It is a perfect nuisance; and it is doubted if any way to expel them has been discovered, except by manipulation. Even in this northern

land they appear to have inhabited sand hills from time immemorial, and would seem to be now on the increase; but on heavy loams,—which constitute, perhaps, nine-tenths of this vast region,—I think they have not been observed. This exemption we ought to prize very highly, and it gives us advantages over the south. If a few of our roses, such as the *Chromatella*, are prevented by our climate from assuming the habit of a tree, it is consoling to know that none in all our collections on heavy soils will be defaced by the rose bug. . . . . .

We are far north for some kinds of the grape, such as the Bland, Isabella, Catawba, and Alexandria—for though they ripen here, and are good, they attain more sweetness in the south. Others are very excellent. Mildew, however, is often a great drawback in wet seasons; and there is a mystery about this malady that I profess not to understand,—for W. Wilson, of Clermont, elevated the Sweet Water on poles twenty feet high, and had fair fruit, while on the contrary, I prostrated mine, with equal success. In a dry summer, the whole crop, high, low, or mid-way, escapes; but when we have frequent rains, there appears to be a zone in which mildew prevails, contracting or expanding according to the weather; and I have seen where it approached within one foot of the ground. I dislike the trellis, but I had one near which an exotic vine sent up a shoot, crossing a bar three feet high, and bending down on the opposite side. The next year was bad for mildew. Such grapes as grew near the roof, however, were fair; and so were those where the top of the stem rested on the ground: while the intermediate portion, only two or three feet high, were blighted and ruined.

Some years ago, it was recommended to remove a part of the main leaves, so as to let in the sun on the fruit; and though I knew that these were important appendages—that in them the sap was elaborated—and that no fruit could be well-flavored without them—yet I knew not but a part might be spared to advantage, and tried the experiment. It proved to be a wet season, and they were ruinously mildewed. Afterwards, I thought the leaves would have been useful in turning off the rain. Grapes under a roof, have been fair in the worst seasons; and it has been proposed to give them a south aspect under a shed, only two or three feet wide, with a close back. Such a structure would afford reflected heat, repel the cold winds from the north, and keep the fruit dry while the rain was nourishing the roots.

I have no recollection of having seen a mildewed grape where the vine was supported by a live tree. Ten years ago I had a Burgundy that spread over a bush only eight or nine feet high, and the fruit was always fair; but two years ago, it was raised on a pole to the height of sixteen or eighteen feet, and ever since mildew has ruined the whole of them.

[To be Continued.]

EDITORS TABLE.

To Contributors and Exchanges, &c., &c.

Communications, Letters, Catalogues, Periodicals, &c., &c., intended for the perusal of the Editor, should be uniformly directed to the HORTICULTURIST, *Germantown*, (*Philadelphia,*) *Pa.* Packages by Express, &c., should be directed to the Editor, as above, by name; they will thus reach him almost beyond a doubt.

MR. ALLEN'S REPLY.—The last May number of the *Horticulturist* is historically a curiosity, as from it dated a series of articles in reply which exercised the writers in various ways, according to temperament; they have ever since been discussing it, and now Mr. Allen asks to sum up, not having changed his opinion by the flood of ink. Well—the atmosphere is now cleared — the lightning ceases, and we have an open field for further experiments, the discussion having prepared some for even more active exertions in behalf of pear culture, and others for renewed care of their trees. Let us all now see what will come of it, looking rather to facts than theories, and eating as many pears as we can get, while we leave a share for the expectant public. For one and all, we wish success to their brightest hopes, and in time we may see a full market supply. Mr. Allen writes forcibly, but we have been obliged to curb him a little; we can assure his readers that he is a much more amiable gentleman than some might suppose, from the turn of some of his sentences.

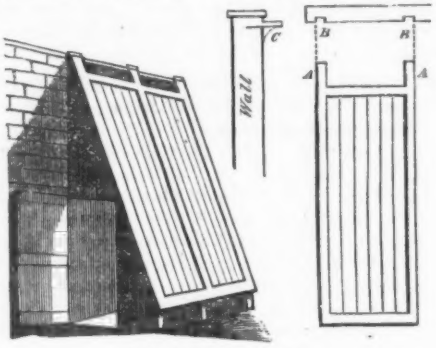
FLORE DES SERRES.—The long delayed *Flore des Serres*, (No. 133) has reappeared. Of original figures it contains *Salvia tricolor*, a Mexican under-shrub with white flowers having a red lip; *Rhododendron Brookeanum;* figures of 20 *Gourds*, with a long though abridged account of the varieties of that race, by M. Naudin; *Solanum capsicastrum*, a small half-hardy Brazilian shrub, with globular orange-colored berries giving it quite the appearance of a little orange bush; a fine curled white *Chinese Azalea* with red stripes, called Alexander II; *Cypripedium Fairieanum;* and a magnificent looking white *hexangular Camellia*, called the Vergine di Colle Beato.

INDIGENOUS OIL-BEARING PLANT.—The French government has given orders for the introduction of one of our native oil-bearing plants, the usefulness of which we appear to have ignored, though it has long been known and described by botanists. The *Pyrularia Oleifera*, the *O. pubera* of Michaux, and the *Hamiltonia oleifera* of Muhlenburg, grows on the rich wooded banks of the mountains of Pennsylvania, and southward throughout and near the Alleghanies. "Leaves obovate-oblong, pointed at both ends, a little downy, or at length smooth, somewhat succulent, oily, acrid to the taste. Spikes ripening but one fruit, which is about 1° long." *Gray.*

The fruit is fleshy, drupe-like, and pear-shaped. The name Pyrularia is from Pyrus, from the fruit, which looks like a small pear, and if a lighted stick is inserted, it will burn like a candle. The experiment of its value will be looked for with interest.

Mr. S. B. Buckley, an excellent botanist, has favored us with plants obtained during his late tour in the mountains of Carolina and Tennessee, as also with the new plant named by Dr. Gray from this discoverer, *Buckleya*.

GLASS SCREENS FOR WALLS.—A simple description of screen, or if you please to call it so, a simple Orchard house, for protecting fruit from frost in spring and for encouraging a fine healthy growth, may be readily formed. For foreign grapes there can be little doubt such a screen would answer; made portable, it may be transferred from the wall to the border to ward off heavy rains, and also assist in increasing its warmth. The trouble of removing would be a simple matter, no rafters being used. The sashes are made upon the most economical



GLASS SCREEN FOR WALLS.

principle, with as little carpenters' work as possible. The glass is made to slide into grooves in astragals its own thickness, three lengths of which fill the sash; a piece of casement-lead put between keeps the cut edge from chipping; a wood pin through the bottom plate keeps the whole tight; no putty is therefore required. The ends of the sashes are left a foot longer (A A) to allow a space of 6 inches clear for ventilation; an inch board 8 inches wide is fixed under the coping of the wall and notched out (B B) for the ends of the sash to rest against, and which is kept fast by half-inch iron keepers screwed on. This board is fixed by a strap of iron passing over the wall, and a bracket under. The sash rests on a plate its own thickness, with an inch fillet on each side at 1 foot clear space from the ground, and at 4 feet from the wall. This and the coping board remain fixed when the sashes are removed. With care in storing the sashes away in winter, they will, on account of their durability, prove in a few years the cheapest covering we can get.

CARE OF TREES.—"In Prussia, Denmark, and the South of Sweden," says Mr. Westwood, "great care is taken of the trees in the public places, and in order to ensure the free action of the rain on the roots, the earth round the stem is kept exposed for about a yard; a circle of bricks or large boulder stones preventing the carriages or passengers from approaching the trees. In the Dutch towns, however, where nearly every street has a canal running along the middle of it, another plan is adopted for defending the base of the trunks of the trees, rendered necessary by the limited space which can be afforded to them, and to the fact that the soil in these semi-aquatic towns allows the roots of the trees to find moisture sufficient, without any additional wet from the surface; for this purpose the lower part of the trunks of these trees is protected by a sloping pavement of brick-work, carried quite up to the bark, and about half a yard high, so that the trees rise, as it were, out of a cone of brick-work.

"The care with which the trees in the public places abroad are tended was also shown in the

manner in which newly-planted young trees are supported. Instead of being, as with us, left to themselves, or supported by two or three rough hedge-stakes, each is trained to straight, strong, cylindrical shafts of wood, fixed firmly upright in the ground, not only affording the trees support, but also allowing them to assume an ornamental and regular appearance at once."

PAWLONIA IMPERIALIS.—By cutting off the blossom buds of this plant in winter, they may be bloomed in a greenhouse or parlour. The flower-buds are completely organized in the autumn. During winter they sit upon the branches warmly wrapped in their thick fur coats; when spring arrives they cast off their garments with their torpor, and burst into blossom. Even if remaining on the tree, they have nothing to feed upon except the little sap stored up in their neighborhood. That sap is as present and active in the dissevered branches as in the branches that remain attached to the tree, and therefore there is nothing to hinder the development of the flowers.

THE SALT WATER AQUARIUM.—A gentleman and his daughter have written us a joint letter, invoking information as to the best books that are accessible regarding the fishes and insects, shells, &c., which inhabit the sea in their vicinity.

This subject has been wonderfully popularized of late, especially in England, and we have students of various grades of research in America, but none of the latter have produced a book readable by the unlearned in technical names. There is a volume, however, which every lover of nature may and should read with pleasure, entitled "Glaucus; or the Wonders of the Shore," by a no less successful author in other walks of literature,—Charles Kingsley, author of "Hypatia" &c. It has been republished in Boston by Ticknor & Fields, and is so simply elegant in its language as to be readily understandable. The other writers on the subject are E. Forbes, Gosse,* and a few others whose books have not been reprinted, but we hope a sufficient demand will be created by admiration for Kingsley's book to induce the same publishers to issue at least Mr. Gosse's.

How insensible to "the Wonders of the Shore" are nearly all the summer visitors to the sea, is happily set forth by Kingsley, and he then leads the uninitiated to admire the curious creatures which have been placed on the shore in so attractive a manner that we wish space was at our command to insert in these pages the whole neat little duodecimo.

Speaking of the Mermaid's head, *Echinus miliaris*, our author says, "conceive a Crystal Palace whereof each separate joist, girder, and pane grows continually without altering the shape of the whole, and you have conceived one of the miracles embodied in that little sea egg, which the Divine Word has, as it were to justify to man His own immutability, furnished with a shell capable of enduring fossil for countless ages, that we may confess Him to have been as great as when first His spirit brooded on the deep, as He is now, and will be through all worlds to come.

"And often," he continues in his happy manner, "standing on the shore at low tide, has one longed to walk on and in under the waves, as the water-ousel does in the pools of the mountain burn, and see it all for a moment." This may come to pass, and has even been practised by the use of proper clothing; but make your catalogue complete if you can of all that you can find, yet how small the number compared with the multitudinous natives of the sea! From the bare rocks above high-water mark, down to abysses deeper than ever plummet sounded, is life—everywhere life; fauna after fauna, and flora after flora, arranged in zones, according to the amount of light and warmth which each species requires, and to the amount of pressure which they are enabled to endure. The rocks have their peculiar little univalves, their lichen-like sea-weeds, in myriads; lower down, the region of the Fuci (bladder weeds) has its own tribes of periwinkles and limpets; below again, the region of the corallines and Algæ furnishes

* A Naturalist's Rambles on the Devonshire Coast. The Marine Aquarium, &c. See also Professor Harvey's Sea Side Book. Mr. Gosse has also published "The Canadian Naturalist" which we have never met with.

food for yet other species who graze on its watery meadows, and beneath all, and still so high as to be uncovered at low spring-tides, the zone of the Laminariæ (the great tangles and oar weeds) is most full of every imaginable form of life.

"Of all the blessings," says Kingsley, "which the study of nature brings to the patient observer, let none be classed higher than this:—that the further he enters into those fairy gardens of life and birth the more he learns the awful and yet most comfortable truth, that they do not belong to him, but one greater, wiser, lovelier than he; and as he stands silent with awe, amid the pomp of nature's ever-busy rest, hears as of old, 'The Word of the Lord God walking among the trees of the garden in the cool of the day.'"

We are sure our correspondents will be delighted with this book; they may collect these curious "Wonders of the Shore," and keep such as will survive the treatment in Aquariums with advantage and pleasure, but their enjoyment will be immensely increased when they learn to observe them with an approach even to science, and Mr. Kingsley will give them ideas of study that will make a pursuit and an enjoyment for even a long life-time.

We know of several Marine Aquariums which are "self-supporting," requiring very rarely a change of the water, that are kept at a great distance from the sea; and truly beautiful and interesting they are,—quite a step in advance of those filled with fresh water, and it may be hoped that while their number increases, the study of natural history that should accompany them will also progress.

PARKS.—On the 15th instant, the plans for a park at Fair Mount, Philadelphia, are to be examined and decided on: we learn that there will be considerable competition. As to situation and water frontage, Philadelphia has the advantage, but in size and magnificence, the example is that of New York. The Central Park is being pushed through by Mr. Olmsted, the superintendent, as fast as large means will allow. He appears to be most energetic, and is determined to accomplish all that lies in his power while the opportunity is presented. In January we saw 2,200 men employed, and were glad to observe that Mr. Calvert Vaux had been appointed assistant architect to the great work.

THE DIOSCOREA.—It will be remembered that last year, Dr. Hollick, of Staten Island, New York, promised to give our readers the results of another season's trial of the Dioscorea. We have his statement, which we consider very favorable, and shall give it in the next issue. Meantime, he has sent us a few tubers to distribute to different climates. The time of planting, at New York, was the 23d of March.

MULE BIRDS.—At the late Crystal Palace Exhibition, Mr. John Beach, of Bradford, showed two mules bred between a cock goldfinch and hen bullfinch; Mr. H. Hanby, of Hyde Park barracks, had a mule raised between a goldfinch and greenfinch; and Mr. E. T. Keys, of Woolwich, exhibited a mule between the skylark and sparrow. "There can, therefore, I think, be no doubt that very many of the beautiful and interesting birds of sunny climes would cross with the songsters of our woods and fields, and would be able to live in our gardens and pleasure-grounds. By being fed in a fixed spot they would probably not stray far off, and thus a new charm would be added to our homes."

CATALOGUES, &c., RECEIVED.—East Avenue Nurseries, of C. P. Bissell & Salter, Rochester, New York: List of 54 varieties of hardy grape vines, with blackberries, currants, raspberries, strawberries, &c., &c. These 54 comprise all that have any reputation, and at prices so reasonable that there is no excuse for not procuring a supply.

Sixth Annual Report of the Buffalo Horticultural Society. This is an old report. We should be glad to receive the later ones.

Wholesale Catalogue of Flower Seeds, for 1859. J. G. Waite, 181 High Holborn, London. A most extensive affair, including all that are "wants."

Evergreens, shade trees, fruits, vines, roots, &c., for sale by David J. Griscom, Woodbury,

N. J. Mr. Griscom has very fine evergreens, of large size, and pays particular attention to orders.

Eddy's Patent Self-Feeding Stall, described. Henry Eddy, M. D., North Bridgewater, Mass. Worthy of the attention of all who keep animals.

List of fruit trees cultivated and for sale by S. W. Houghton, Winchester, Tenn. This is the first gun from Tennessee, and it "promises well" for the progress of the State. Let us hear from some of you.

Gossip.

THEY have lately had an exhibition at the Crystal Palace, London, of Canaries and cage birds, which proved a success. Mr. Kidd, the ornithologist, furnished a daily lecture on the natural history and judicious management of song birds, and it may be justly stated, that the whole exhibition could not fail to be a source of pleasant and highly rational enjoyment to the general public as well as to the bird amateur. Among the foreign birds were two remarkable parrots,—the first a grey, who spoke the words,—Walk in, Mr. Cox; Polly wants her breakfast; Puss; mocks the cat; calls the dog Toby, and then laughs; walk in, Sir; who are you? Polly is a darling. Speaks many names, Elizabeth, &c. May be handled by strangers. Is very quiet.—Green Parrot, (South America). Words spoken by this bird—Eliza, George, Charles, Charley; Polly, Polly; Oh you pretty Polly; laughs; imitates talking, and children crying. Quick in imitating sounds and tunes. A very good-tempered bird.—A Rose-breasted Cockatoo. Words spoken by this bird—Pretty Boy, Polly, Puss, How do you do. Calls by name several members of the family, &c. Highly commended. But the most attractive bird was a Mealy Turnerown, which sings and talks with marvellous fluency, without requiring, as in the Arab tale, a Grand Vizier to be his interpreter. In clear, soft, silvery tones, like those of a silver bell, or blushing school Miss, he simpers forth, "Pretty dear, call the doctor, Polly sick! Polly sick!" He, besides, calls the house dog by name, whistling to him. Yet his tuition was at second hand, by a paroquet: and the funny contrast to the listener, between this delicate little speaker and his clear, full enunciation, drew crowds around his cage. His money price is £20.

PEOPLE very frequently are puzzled with the idea of conducting and non-conducting powers, but they are very simple. The main business, first, with pits and frames is, to prevent a too sudden loss of that interior warmth which has been previously accumulating. This is what they term arresting radiation. At the same time it must be admitted that covering materials —in the case of cutting winds—certainly avert that refrigerating action which winds are known to exercise by passing over bodies warmer than themselves. Dryness is a great essen tial, and, although we cannot dry mats when we choose, we can continue to renew the straw when it becomes much draggled. I had almost forgotten to suggest, that all glass should be kept clean.

MR. RIVERS says, that boiling coal tar with slacked lime will make a shining surface on woodwork, and walls of any clay, or turf, which is as imperishable as stone: it is, therefore, better than all the paints in the world for the outside work of these houses; and I have proved that rough surfaces may be made in his way as durable and hard as cast iron, by using the dust from a smith's forge over the tar, as soon as it is brushed on. I had six wooden spouts, each 18 feet long, 4 inches wide, and 6 inches deep, for a particular purpose, and the man who sup plied them (God forgive him!) assured me that they would last three lifetimes, if they were kept painted. But they soon turned so leaky, that a painter, with nothing else to do, could not

make them hold their parching jaws together for an hour, in hot weather; so I took the painting of them into my own hands, and gave them three good thick coats of hot tar, and as much of the forge dust every time as the tar could suck in. From that day to this these spouts have been as sound as a bell; and when I use tar for paint, I dust it immediately with that smithy dust, and brush off what is not fixed after the tar is quite dry.

PAMPAS GRASS.—Keep the Pampas in the same pots till March, and in a cold pit, if you have one, or in the greenhouse, in frosty weather, and out in fine. Dig out a pit one yard across, and two feet deep, and fill it with fresh sandy loam, and a little very rotten dung, just what one would like for an early bed of Radishes. Plant the Pampas in this, and water once a week all through the summer. The best place for it is on the grass in front of evergreens, or the back part of a plant border, next to a Portugal Laurel. The dark evergreen is to set off the beauty of the spikes.

THE principle of the Waltonian Case is the same as that by which tanks of water are heated, by passing hot-water pipes through them. The water is the body for retaining the heat in both cases. The chimney from the lamp, or gas-jet, in the Waltonian Case, must pass through a tin or zinc case full of water, as the hot-water pipes run through a tank. Heat a tube, or pipe, with either smoke, steam, gas, water, oil, or tan, and get the tube or pipe through a vessel of water, and the principle is the same. The water is heated by the heat of the tube, and parts with it slowly, and more uniformly than from tubes. If you bend a one-inch iron tube, and place the bent part against the back of a cottage grate, or the back of the fire, and run the two legs into a cupboard on either side of the fire, and there let both ends discharge into a can of water, on two levels,—one leg near the top, and the other leg near the bottom of the can,—you can have a can of boiling water in your cupboard. Or have a longer pipe, so as to get both legs out through the wall to the garden, or sun side of the house; then place the two legs in a long, flat, shallow vessel, like a beer-cooler, but on two levels, top and bottom, as in the can, and the beer-cooler will soon be as hot, or rather the water in the beer cooler will soon be as hot, as was the beer or wort when they put the hops in it. From a lid to let up this heat, it would be easy to have bottom heat on a different principle from the Waltonian,—the principle of heating the water by its own circulation; while Mr. Walton heats by contact, without circulation.

LARGE PEACH CROP.—The Brothers Loughry, of Adams County, Ohio, raised the past season *thirty-six hundred bushels of peaches*, which brought them in the Cincinnati market an average of three dollars per bushel, or an aggregate of over $10,000. Deducting the expense of gathering and marketing, the net product was $9,000. This crop was from an orchard of only ten acres, with the exception of about one-eighth of the amount from a second orchard just commencing to bear. Mr. L. states, that on their grounds the peach-crop has failed only four times in the past ten years. Such an instance of success is well worth recording in this season of general failure; and is calculated to inspire other fruit-growers with the hope that like good fortune may yet be theirs. He intends planting pears largely, with peaches, for market purposes, believing, as we also do, that with a judicious selection of varieties, and proper culture, the pear-crop will be found reliable, and in the long run profitable as the peach. Mr. L. lately visited the Columbus Nursery, of Batcham Co., to engage fruit-trees to start his son on a farm in Pickaway county.—*Exchange.*

BAKED PEARS.—Is it generally known that most of the keeping-pears (I can answer for Beurré Rance, Easter Beurre, Swann's Egg, Chaumontel, and St. Germain,) are excellent when baked, without any addition,—the juice being a rich syrup, giving the impression that a large quantity of sugar had been used? In this way windfalls, &c., otherwise worthless, may be turned to account. They require merely to be wiped clean and put into a dish; if heaped up so much the better.—*P. W. J.*

FOREIGN NOTICES.

NEW ROSES—1858.—*Hybrid Perpetuals.—Abbé Feytell.* Deep rose, shaded with lilac; globular, very large, and full.

Duke of Cambridge. Bright, vivid rose. A great improvement on *Madame Fermion.*

Evêque de Nîmes. Deep, vivid crimson. The petals are disposed in the form of a rosette, which gives it a very unique appearance. This rose is most decidedly the gem of the season.

Gloire de Lyon. Rich, velvety, purplish crimson, intensely dark, in the way of *Arthur de Sansalles.* It is, however, thought to be superior to that excellent variety.

La Bella Egamè, or *Madame Damet.* Rosy lilac, beautifully cupped. A neat, pleasing variety.

Louise d'Autriche. Light crimson. A large, showy rose.

Madame de Besse. Pink, with rosy centre, in the way of *Madame Knorr.*

Madame Vigneron. Pale pink, large, and very double. A very double and fine new Rose.

Madame Van Houtte. Light pink, most beautifully cupped; of exquisite form.

Marie Thierry. Deep rose, shaded; an expanded rose; large, full centre, and very double.

Monsieur de Montigny. Very rich, deep rose, shaded with purple; large, and double. An abundant bloomer, and the largest rose of the season.

Queen of Denmark, called also *Etoile de Marie.* Pale blush, shaded with pink; very stiff petals; and first-rate form, in the way of *Madame Vidot.*

Thomas Rivers. Rosy lilac, shaded like *Colone sy*, but greatly superior, being larger, with finer shaped cup, bud, and flower.

BOURBON.—*Madame Comtesse.* Deep flesh-color; finely formed. A seedling from *Louise Odier.*

HOW TO KEEP GERANIUMS OVER THE WINTER.—Take them up on a dry day. Knock all the mould off their roots. Shorten them down to two or three joints. Lay them in the sun for a few hours if you can. Mind there are no leaves on them. Have ready some quite dry pit (not sea) sand. Bury them four inches deep in the sand, the roots downwards. Keep them dry all winter; you may do that in a good cold frame which does not drip. Fine coal ashes will do as well as pit sand.

If you have conveniences for keeping frost out you need not bury them, but may keep the ends out of the sand.

THE MUSCAT HAMBURGH GRAPE.—It will be remembered that this was the variety which took the prize at the Pomological Society, as being the best new grape having a Muscat flavor. At the time the Society made the award, it was stated that this variety would ripen with as low a degree of heat as the *Black Hamburgh;* but an opinion having got abroad, which is believed by many, that it will not ripen in a house without the aid of fire heat, which the *Black Hamburgh* will do, considerable disappointment has resulted. It is very satisfactory for us to be able to state, that, at the last meeting of the Pomological Society, Messrs. Henderson, of Pine Apple Place, exhibited a bunch grown upon a shoot, which, during the summer, had been introduced into an ordinary greenhouse, the plant undergoing no cultivation whatever, and receiving no heat, except *one* evening during the present month, when frost was expected. The berries were quite ripe, and possessed the marked musky flavor.

THE PRUNING, CLEANSING, AND DRESSING OF FRUIT TREES.—All pruning should be done the moment the leaves have fallen, whatever be the period at which they are required to be forced. To go into detail about pruning in general would occupy too much space. But I must say a little more about cleansing and dressing. The object of all dressings is two-fold,—to destroy whatever insects, or eggs, may exist, and to avert their attacks in future. There are

several practices extant as to the kinds of dressing to be used: but I would have it borne in mind, that soft soap and sulphur are the two principal things on which the gardening world at present depends—that is to say, as to power. But in many cases it becomes requisite to use some thickening medium, to form a body of some endurance on the wood; and for this purpose such things as lime, clay, cow-dung, &c., are used. I will, therefore, merely offer an universal recipe, which, although it may not suit every case in gardening, is yet of service in nine cases out of ten.

It is this—one gallon of water, in which four ounces of soft soap are well dissolved; add then as much sulphur as it will carry; and finally thicken with clay to a regular paint. This mixture may be applied to any fruit tree in a rest condition, but not to living foliage. The stems should be thoroughly painted with this mixture, not leaving a crevice untouched. In the case of vines, the loose bark must be stripped away as clean as possible, before applying the paint. This is a most indispensable procedure, for this extraneous bark is of no real use to the tree, which, indeed, in a state of high health, seems to make an effort to cast it off. The stem enlarges, and, like a fast-growing youth, the same coat no longer fits, and, in attempts to wear it, the seams, or other parts, give way. T. R.

Rustic Work.—I see that one of your correspondents is inquiring about rustic work. I therefore beg to send you a plan of making rustic vases, as I made a few about twelve months ago. As most of our florist friends are no doubt in the habit of getting their groceries from one place, I advise them to go to their grocer and get him to give them a small butter-tub; when got, saw it in halves, or according to the exact depth they would like the vase; after which go to the Oak-yard with a saw, cut some tolerably straight sticks, without bark, one inch or more in diameter; but do not forget a pillar of three inches in diameter. I give 2*s.* per cwt. for the Oak.

Nail the sticks close together all round the vase, in whatever form may suit the caprice of the individual. Make holes at the bottom for drainage, by boring with a red-hot poker; after which nail the vase to the top of the pillar, being sure to make it firm. Paint over with oak varnish, thinned with a little turpentine. It will not disgrace the Crystal Palace. For a finish I nailed a few crooked sticks round the top, which appear like handles, and round the rim a piece of strong rope.—S. Tattersall.

The Anachis which infests rivers and lakes in England seems likely to spread over the whole kingdom. It has already seized upon the large basin at Kew, and obstructed several rivers; the thread of this plant is wonderfully rapid.

The moon still has an important agency assigned to it, in moulding the incidents of climatology, at least, and this view is by no means confined to what is technically called popular belief; many of these points have been examined by the aid of the most rigid analysis of long periods of observation, with the result of rejecting the whole agency in every case. The Herschels repel the charge or assertion that either of them advocate existence of any system of lunar influences, and they particularly repudiate the weather table often attributed to them.

It is curious to notice that so important an observation as that of the quantity of water falling in rain, had its origin in bold doubts of a prevalent belief that fountains and rivers were supplied from internal masses of water, arteries and veins of the sea, circulating the life blood of the earth. A French author, Demys Papin, printed a work on the *Origin of Fountains*, at Paris, in 1674, the object of which was to show that the rain and snow-waters are sufficient to make the fountains and rivers run perpetually.

Ipomæa Cœrulea.—The following statement may perhaps be interesting to some readers. Mr. Glover, of Smedley, Manchester, has an *Ipomæa cærulea* (which grows in one of his fern-houses), that has produced, during the past season, 13,000 blooms. Strange to say, these blooms were weighed, the weight of them being 25 lbs. Now this said plant must have

received a deal of nourishment from some quarter or other. It clearly proves Mr. Beaton's assertion that any vigorous climber must exhaust the soil in a bed in the course of about three years. The above statement respecting the Ipomæa I had from Mr. Glover. It was a splendid sight to see the blooms as they came forth.—S. TATTERSALL.

ARBOR WALKS.—"I propose to make an arbor sixty-six yards in length, six or seven feet in breadth, and nine feet in height. I am informed that Hornbeam is the best tree to use for the purpose. I shall be glad to know about what number I should require for a walk of the size mentioned. And I shall also be thankful for any hints as to planting, training, &c."—G. W. H.

[There is a similar arbor walk at the Stud House, Hampton Court, of great age, full of Hornbeam trees, and romantic legends. In the olden times, trees were planted too thick for these arbors; but the Hornbeam will bear to be planted as close as four feet apart for an arbor walk,—that is, a walk with a row of trees on each side of it, feathered to the ground, and covered over-head with the branches and tops of the said trees. All they require is, to have the ground trenched for them,—say, four feet wide to begin with, and two feet deep.]

WATERPROOF CEMENT FOR AQUARIUM.—I have been making an aquarium,—plate-glass front and back, and slate ends and bottoms,—and was very much puzzled to get it water-tight. Here is the recipe for a cement that is waterproof, and will stand either heat or cold:—One part gutta percha; two parts pitch; simmered in a ladle, and well stirred. When hot pour it in the joint, and let it cool gradually. When cold it is tight.—ROSEA.

Correspondence.

Our London Correspondence.

I WAS amused the other day, at seeing a paragraph in the London *Leader*, on "dinners," in which it is stated that Caulaincourt (ambassador to St. Petersburg from Napoleon I.) once gave a dinner, at which, among other features, there were seven pears, which cost 300 francs, $60 a piece. "But," says the writer, "Paris in 1838 hast left St. Petersburg in 1806 far behind. At Chevet's, in the Palais Royal, there are pears in the windows equal in size to small pumpkins. Curiosity the other day prompted me to make inquiries as to the price of some of them, and Madame Chevet politely informed me one might be had for £25, ($125!) They are, however, very seldom purchased, but let out in the same way as plate or chandeliers, to make a show, for 5 francs ($1) a piece." There is a pear story for you, and I have no doubt of its truth from what I saw myself.

It will soon be time for your importers to look about for the best new roses of 1858, and I name for their benefit two or three of great merit. Of hybrid perpetuals, Eveque de Nimes, a crimson, and Triomphe de l'Exposition, with Colonel de Rougemont, are the favorites. The latter eclipses Baroune Prevost, and supersedes it. Louis Chaix is a superb crimson, descended from Geant des Batailles, and very promising. We have now a better assortment of hybrid perpetuals than could have been hoped for a few years ago, and I trust your amateurs are well supplied with these varieties.

Dr. Lindley notices the new California strawberry, called Fragaria lucida, with the following remarks:—"It was introduced a short time since through M. Van Houtte. Sufficient time having now elapsed to ascertain its qualities, Mr. Sprekelsen, an experienced cultivator at Hamburgh, makes the following report. He is of opinion that great things may be expected of it, and that it will give rise to a new race of double-bearing varieties. Every runner and each branch of the runners forms a strong flower-bud. It moreover, ripens late, that is to say, at

Hamburgh, towards the end of July, when other strawberries are over. It is far better flavored than any late English sort. Its fruit is, however, deficient in size, flesh, and juice. The habit of this Fragaria lucida is described as very dwarf, the leaves have very short velvety stalks, of a red color; they are deep green and shining on the upper side, but woolly beneath. There is generally but one flower to a truss, and that is remarkably large. The fruit is sweet, without acid, but a little vinous. The "seeds" are sunk in the flesh. Madame Elise Vilmorin, who has made the strawberry her specialty, is *said* to expect great things from it. It is no doubt the same as a plant found by Douglas and called by him Fragaria Macraei, which Sir Wm. Hooker referred to F. chilensis."

The Œconomic Museums, at Kew Gardens, are among the most valuable institutions of this great metropolis. Sir William Hooker's efforts have been crowned by the most ample success and popularity, and are attended with most interesting commercial advantages. They are far more interesting and important than the most sanguine promoter could have anticipated upon their first formation. So huge have they grown that the new museum is wholly devoted to illustrations of the products of Exogens, while the old house is filled with Endogens (or Monocotyledons) and Cryptogamic vegetation. It is hither that students should direct their steps if they wish to know what tropical palm trees are, and to examine at their leisure the thousand curious forms of vegetation of which they can never learn much from books alone. Winter is as good a time as any for the study of museums, and it is to be hoped that the approaching months will be vigorously applied to that purpose by many a young aspirant to scientific fame and social rank.

A new room has been opened at the British Museum, containing an extraordinary collection of foreign plants and seeds—sections of the trunks of trees, showing their structure, and specimens of woods, polished and unpolished; they thus display the variety and beauty of the grain of the woods. One table displays cabinet and other woods, and the woods used by the North Western Railway in the construction of their carriages; and another what may be called the curiosities of botany, such as the efforts of a tree to cover a wound—a spike-nail embedded in oak and covered over with many subsequent layers of wood, &c. This is interesting and instructive, though less so than Sir William Hooker's exhibition of the curiosities of grafting, where much is to be learned by the eye. These exhibitions are to be commended, great results often being brought about by a practical mind viewing the "rarities" of nature's works. How much better than the ever-active energy displayed at Washington in President-making, and trifling debates. Why, I understood before I left America, that even the plans for planting the public grounds designed by Downing, have been left to take care of themselves, and instead of one good national example of "Park and Plaisance," the majority of the public grounds are growing up with Ailanthus and Abele trees! I write it with shame; the very powder wasted in firing salutes for empty-headed officials, would more than create a fine "Place d'Arms," and keep it forever in order. But the "civilization" which revels in beauty will come in time. [There has been more money wasted in *frippery* on the new capitol, than would have bought all the ornamental trees for sale in the Union.—ED.]

I went down in November, to Chatsworth, to see the revolutions there created by the new proprietor, lately Earl of Burlington. Vast improvements have been made since my last visit. The new wing and elegant offices and entrance have been completed. I got the correct measurement of the new conservatory, which some doubters in America would scarcely credit; it is 278 feet long, 123 wide, and 67 feet high, and the whole appearance is excellent.

By great good luck I had a view of the Emperor Fountain in full play. The jet reached 300 feet in height, and seemed joyfully endeavoring to go higher and higher, and overleap itself. The orange house is 180 feet long, 27 feet wide, and 21 high, and has very noble trees in full fruit. Sir Joseph Paxton has erected an Anglo-Italian villa near the gardens, and to those bringing proper introductions, is affable and polite; but do not approach him without the

"papers." I could fill many letters with my notes, but the space I am confined to will not permit. Let every American who visits England see Chatsworth, if he sees little else.

Yours truly, HORTULANUS.

London, January, 1859.

GRAPES AND GRAPE VINES.—The attention given to grape vines at the present time, is likely to lead to good results. Some years ago, we stated in this journal, that we were on the eve of important discoveries in new varieties; this is now realized, and fortunate possessors of good plants of desirable kinds, are reaping a harvest well deserved by their industry and anticipation of an unsupplied want.

There is a great deal said upon borders, and planting in good soil; enough almost to discourage some timid people who have not the materials at hand, when they would be glad to have a vine on their premises. But no one should be discouraged. We would have everybody possess a grape vine, whether they have one foot of ground to spare or an hundred acres; citizens especially, ought to plant them; there is no particular secret which need discourage any one. We have long known a vine, in a very small city yard, between high walls where the sun scarcely ever reached the root, that was carried to the top of a third story back building, formerly used for the drying of clothes. Here it threw out its beautiful leaves and glorious clusters in such abundance, that the proprietor had the pleasure of annually distributing bushels to his neighbors; one advantage possessed here, was, that it was out of the reach of robbers—the owner kept the key emphatically.

Hoare, in his celebrated treatise on the grape vine, long since enunciated the fact, that preparation of the soil *ensured* the prosperous growth of the vines, and the annual production and maturation of fine crops of grapes, and that this process was highly deserving of being practically adopted at all times when circumstances permit; yet, he assures us, and practice authorizes the belief, that it must not therefore be supposed that vines will not grow and mature fruit, unless planted in well-prepared borders. Quite the contrary is the fact, for vines will do well in any unprepared soil that is not too stiff, and that has a dry bottom; but they grow quicker, and consequently bear greater crops of grapes within a given space of time, when planted in a soil that has been properly prepared for their reception.

"If two cuttings be planted," he continues, "the one in a soil of the former description, and the other in one of the latter, it will be found at the end of ten years, that the stem of the vine growing in the soil that was unprepared, will not be more than half the size of the one planted in the other; consequently, for every pound weight of fruit which the smaller stemmed vine can mature, the other will ripen very nearly three pounds. This difference occurring annually, is sufficiently great to repay most amply the trouble and expense of a border.

"Indeed, if vines could not be planted with any prospect of success, in any other situations than in borders set apart for that purpose, but a very small quantity of grapes would be grown compared with what the country is capable of producing and does produce. We have seen barns and outhouses in New England, covered with vines and fruit, where there was no border whatever, and which never, or rarely, received even a winter top-dressing. Various places may be observed *in favorable aspects*, where vines are trained, while their roots possess little or no soil at all on the surface adjoining their sites, the ground around being paved with bricks, or stone, or trodden hard. If the ground in such situations," says our author, and we can vouch for the fact, "adjoining the side of the wall or building, be opened to the extent of eighteen inches square, and as many deep, it will be sufficient to admit the roots of a young vine, which must be pruned to suit the place. If a wider and deeper space can be made, it will of course be better, but if not, *that will do*. Loosen the sides and bottom as much as possible, and fill in with two-thirds of rich, loamy earth, and one-third of road or street scrapings, previously well-mixed together; and if necessary, the surface covering, whether of stone, brick, or otherwise, may be restored again to its former state, provided a space of about six

inches square, be left open for the stem to swell in during its future growth; thus treated, they will generally do well, though not so well as under better treatment. This is wholesome doctrine, and it is true. Indeed, it is hardly possible to plant a vine in any situation, in which it will not thrive, provided its roots can by any means push themselves into a dry place, and the aspect be such as to afford a sufficient portion of the sun's rays to elaborate the juices of the plant. This may be observed when a vine is planted near a deeply-laid gravel walk; through the interstices of the stones the roots travel and perhaps enter the grass ground beyond. They possess an extraordinary power of adapting themselves to any situation, provided it be a *dry* one. They will ramble in every direction in search of food, and extract nourishment from sources apparently the most barren, thriving where almost every other description of plant or tree would starve."

Such is Mr. Hoare's theory, and such thousands may find to be the fact. And yet this is no argument for the neglect of grape vine roots; where space does not admit of a larger border, winter mulching should be resorted to. We would thus advise the planting of the vine in the smallest garden spot—in short, in every spot where there is a chance of displaying the top to the sun and air—even where the sun does not reach more than for a few hours of the hot summer's day; we may calculate upon thousands of tons being produced in cities, which need not be dependent for this fine fruit upon farms in the country. Cities and towns, too, possess another advantage; they *may* grow the foreign kinds to great advantage, both for profit and amusement.

With plenty of light and air, and a little attention, a crop of fine grapes may be had in situations heretofore deemed of no value. And what an enjoyment may be had from the cultivation of a single vine or two! To call into existence and cherish such a beautiful plant, even among pent up walls, gives something of country delights; the amateur may well exclaim with Wordsworth:

"And 'tis my faith that every flower
Enjoys the air it breathes."

DEAR SIR:—An old subscriber wishes you the best of success. Go it strong on pears and pear culture, and you will please me. I have a tale to unfold on that subject myself, (not a tale of woe,) but I shall bide my time, and if Jack Frost does not get drunk some night next spring, and stay out too late in the morning, about the last of April I shall see somewhat about pear trees, and perhaps you shall hear. This is the only blight I fear, and it is all that stands between me and success, in the culture of the dwarf pear.

Very respectively yours, J. T. C.

DEAR SIR:—I am glad to see we are to have the dwarf pear question fairly considered. To my mind it is absurd to say that all the failures are the result of negligent culture, and that climate has nothing to do with it, when thousands of trees in the West, have been winter-killed within the last ten years. Truly yours, A. HUIDEKOPER.

EDITOR OF THE HORTICULTURIST:—South-western Georgia is perhaps the last place from which you would expect a "note" of horticultural interest, and you will therefore not be much disappointed should the following fall short in matter suitable for your journal.

There are a few subjects, however, in your recent issues, on which I would like to comment.

1. As to fruit-tree labels. I have used for some time, simple *roofing slate*, lettered with *white lead*. Could you see one which I have just finished for a row of twenty-five "Belle Lucrative," there would be no necessity for eulogium. They are neat, imperishable, ineffaceable, and legible at any "preconcerted" distance, say twenty feet. Farther, they can by no force of neglect, injure the tree; and are, I think, somewhat of a terror to our southern cotton-tail-i-cusis," or rabbit, (next to the little nigger, the insect most injurious to vegetation in this latitude.)

In fact I cannot do *without* a slate label. As for the trouble, I will engage to print *two*, on an average, while my next neighbor is hunting out any given variety in his orchard.

The cost is a trifle, and the lettering a nice amusement for a rainy day, not involving much of what Dr. Johnson calls the "labor of excogitation."

2. As to dwarf pears.

Between Messrs. Allen and Van Buren, the soul of peardom is in no small tribulation.

On reading Mr. Van Buren's note, I instantly turned to an old Vol. *So. Cultivator*, containing the article which he now regrets and retracts. It is therein recommended to plant the dwarf pear so that *the whole quince root shall be six inches below the surface*—literal "pear-i-cide."

Shall I tell you that *I* was mislead by that very article, that I did so plant certain pears; or describe the true pomological impatience with which I waited for the fall to come, that I might —take them all up again? They are now planted like the others, the bud barely covered, which I take to be the proper "mean" between Mr. Van Buren's "extremes." Those lifted had not rotted, but are now shedding a ring of outer bark, where they were *choked*.

We would like to have more light on that subject, but certainly "quince" will throw out roots as readily at top as "bottom," *and* the pear *will* throw out roots if it sees a chance of quietly inearthing them.

3. As to failure among dwarf pears. Mr. Allen's picture has its photographic copies even *here*. But it seems to me that they are the result of a fixed conviction among our cultivators, that the pear and the potato (or other esculent) require exactly the same treatment, simultaneously conducted on the same piece of ground. The legitimate "conclusion" being a cry of "small potatoes," and "dwarf's a humbug!"

The *soil* may stand a double crop, but the year's supply of moisture in this climate, is *not* "enough for two." Then look at the cultivation required by an annual tuber, and fancy the feelings of a "dwarf," as the cold steel goes crushing through its fibres!

I am frequently asked, "what crop is best for an orchard?" and I don't think that I shall ever depart from, regret, or retract, the simple answer, "*Fruit Trees*."

I have even discarded the southern "cow-pea," though it does signally ameliorate fruit lands; but it throws a higher shade than consists with the welfare of the base of a pyramid; and, like other crops, be they potatoes, pears or grass, or what not, it takes its lion-share of that not-to-be-divided moisture, which the air never fails to deposit in properly prepared earth.

I would say that land cannot be too deeply prepared for choice fruit, nor too highly cultivated, or *cropped*. I can show a *perfectly healthy* peach orchard six years old, managed exactly so, with stems as smooth as a nectarine. And Mr. Allen, I think, will envy the compliment paid by a young lady, to my dwarf pears—that "the twigs looked good enough to eat!" But *jam satis*.

F. O. TICKNOR, M. D.

Torch Hill, near Columbus, Ga.

MR. EDITOR:—I noticed in the December number of Hovey's Magazine, p. 557, that a correspondent, Mr. Wilson Flagg, says: "The name of this genus, (the cornels,) is said to be derived from the Latin *cornu*, signifying horn-wood, on account of its great hardness." Was it not derived rather from the branching habit of the limbs, resembling the horns of a stag? Or did both facts suggest the name?

AMATEUR.

From *cornu*, a horn, from the hardness of the wood. Its value as a material for warlike instruments has been celebrated by Virgil—*Bona bello cornus*.

DEAR SIR:—Will you be so kind as to present us with a drawing of the Union Village grape in some future number of the *Horticulturist*, there is considerable interest manifested in grape culture in this section; the Delaware, Rebecca, Diana, and Concord, are to be found in most good gardens here now, and I think the balance of the newer varieties of good grapes would soon be, if you will assist by illustrations of them whenever you think proper; the illus-

trations of the Delaware, Diana, Rebecca, and Canadian Chief, in the back numbers of the *Horticulturist*, have done good service; please to give us all the light you can on the subject; we feel that we need it all. Yours, most respectfully, JOHN LOWE.

[We have a series of the new grapes in progress of illustration, which will appear soon. ED.]

DEAR SIR:—As to our 54 varieties of grape vines; we have taken pains to secure every promising sort that comes to notice, as to those "*ready* to come out" as you say; hundreds and hundreds of seedlings are started, and each parent "crow will think his own young is the whitest." We are constantly rejecting sorts as unworthy of cultivation, after trying and testing the plants and fruits.

You ask our views of vines:

1. Where Isabella will not always ripen. — Best 6. Delaware, Diana, Logan, King, Concord, and Hartford Prolific. Best 10, add to the above, Northern Muscadine, Tokalon, Union Village, and Golden Clinton.
2. Where Isabella will always ripen. — Best 6. Isabella, Delaware, Diana, Logan, Concord, and Tokalon. Best 10, add to the above, Union Village, Marion Port, Devereux and Clara.
3. Where Catawba *always* ripens *well*. — Best 6. Catawba, Isabella, Diana, Rebecca, Tokalon, and Child's Superb. Best 10, add to the above 6, Senior, Herbemont, Anna, and Archer.

In fact, where Catawba *always* ripens *well*, you may plant any sort you please, for *all* will ripen well—only some of the northern "foxes" are not worth planting where better will grow.

You ask about Child's Superb; it is a seedling, from Utica, N. Y. The propagators insist that it is a pure native, and hardy; but the lobing and serrating of the leaves, prove beyond dispute its foreign origin. It is probably an American seedling from foreign seeds. The bunches are large, the berries large and very good; it is prolific; it does beautifully as a wall grape, with slight protection; but does not *need* glass, (here,) although under glass it is magnificent. This leads us to be quite confident that south of where Catawba *and Anna* will ripen, the Child's Superb will be a capital out-of-door grape.

And about that *Anna*. We saw a few bunches here that were very fine; but all the clusters on the vine were not. Our experience is that it is a very nice White Catawba, and that it would take a very good judge of grapes indeed, to detect (blindfold) the difference between Anna and Catawba, by taste. Very truly yours, C. P. BISSELL & SALTER.

FRUIT-GROWER'S SOCIETY OF WESTERN NEW YORK.

[Reported for the Horticulturist.]

This Association held its Annual Meeting in the Court-house, at the city of Rochester, from Wednesday, 5th of January, at 11 o'clock A.M., to Thursday, at 1 P. M.

After organization, and while the Committee on subjects was preparing its list for debate, the question as to ripening winter pears was discussed for a few moments, and it was universally admitted that we need more information as to how to perfect the fruit on the tree; how to produce good and mature fruit by careful cultivation,—than how to make a good pear out of a poor one, by any process of ripening. When fruit of good quality is obtained, the difficulty of ripening is not so great as it is supposed to be.

Judge Langworthy introduced the question, which was subject 5, at the meeting in June, 1858, and very interesting remarks were made by many members, as to the relative advantage of the fumigating process; the pig and chicken cure: the sheet and shaking process; and the asafœtida and tanner's oil remedy, for the curculio pest.

Mr. Ainsworth, of Ontario, by employing this last remedy, had his trees loaded with fine plums for one season; but next year the trees were as dead as the curculio. The only reliable remedy is the sheet and jarring process, thoroughly attended to. Prof. Coppock, of Erie Co., raised at the rate of four bushels to the tree by its aid. Mr. Barry, of Monroe, raises from 50 to 60 sorts of nice plums in this way.

Mr. H. P. Norton, the President for 1858, who declined a reëlection, delivered the annual address, a copy of which was requested for publication.

The following officers were elected for 1859:

President,—B. Hodge, of Buffalo. Vice Presidents—J. J. Thomas, Union Springs; W. Brown Smith, Syracuse; Prof. W. R. Coppock, Buffalo. Secretaries—C. P. Bissell, Rochester; Jno. B. Eaton, Buffalo. Treasurer—W. P. Townsend, Lockport. Executive Committee—P. Barry, Rochester; J. J. Thomas, Union Springs; C. L. Hoag, Lockport; W. B. Smith, Syracuse; Joseph Frost, Rochester.

The Committee on Subjects reported as follows:

Cultivation of Apples—1. How many varieties should be embraced in an orchard of 1,000 trees, to secure the largest profit of orcharding in western New York?

2. Which are the most profitable varieties for an orchard of 1,000 trees?

Cultivation of Pears—3. Which offers the surest and greatest profit in extensive orcharding; autumn, or winter pears, or both?

4. How many and what varieties should be embraced in an orchard of 1,000 trees, to insure the greatest degree of success and profit?

The following questions apply to the cultivation of both apple and pear:

5. What season, fall or spring, is most advantageous generally, for planting extensive orchards?

6. What is the most favorable condition of soil, both as regards quality and previous cultivation?

7. Is the application of manures or compost necessary at the time of planting, and if so, what kind?

8. How often, and in what quantities, should manure be applied to orchards to secure the best results, both as to tree and fruit?

9. What are the advantages or disadvantages of root-grafting, in comparison with seedling-stock grafting, with reference to growth, durability, and productiveness?

10. What process of manuring, if any, is best adapted to the pear and apple, after coming to the period of producing fruit, and what depth to plant them?

11. What period of time is required to perfect the fruit bud, from its first inception to its ability to produce blossoms?

12. What is the experience of this meeting as to the present or final result in the success of dwarf pears?

Grapes, &c.—13. Is grape culture, for wine, profitable north of the latitude of New York city? If so, what varieties will make the most and the best wine to the acre?

14. Which grape juice becomes good wine with least care, attention and expense?

15. What sorts of grapes are best to grow for other than wine purposes, north of the latitude of New York city, i. e., best as to their productiveness, hardiness, and time of maturity.

Questions 1 and 2 were, by vote of the Society, discussed together, and the Society, after full debate, balloted with the following result: 2 members voted for all Baldwins; 5 members voted for 500 Baldwins and balance made up of Rhode Island Greenings, Roxbury Russets, Northern Spy, Twenty Ounce, and Talman Sweet; while the remaining were for from 200 to 400 Baldwins, each voter making the number up to 8 or 900, from the above-mentioned 5 varieties, and filling in the balance of the 1000, with some particular favorites of the voter.

Question 3. The preference was given most decidedly to autumn pears.

Question 4. Was not balloted upon, although the debate upon it and the information given, were exceedingly interesting. Some of the statements were as follows: Prof. Coppock had for the past eight years, sent more pears into Buffalo market than any six other fruit-growers, and had altogether better results from pears on quince than from his standard trees. Said he, "had I planted standards alone, I should have had no "surplus of fruit." It was universally acknowledged that some varieties which are finest on quince, are worthless as standards. One gentleman realized $262, cash, for the pears from 160 dwarf trees in one year. Some standard Virgalieus, in Ontario Co., did well. From a single standard tree, 3 barrels sold at $22 per barrel! A standard Virgalieu on Judge Howell's place, in Canandaigua, had not failed of a crop for forty years, and for twenty years has averaged twenty bushels a year, selling at an average price of $3 per bushel. Mr. Finlay averaged two barrels to the tree, at $16 per barrel. As to how many and what varieties, the important thing is to start right, with good sorts and with a few sorts.

Question 5. Far more depends on the after treatment of the tree than upon the *time* of planting, and trees can be safely transplanted at any time from October to the last of April, if the ground is not closed by frost, provided the soil be properly prepared before-hand, and suitable attention be bestowed upon the trees afterward. More depends upon the after treatment of the tree by the cultivator, than upon the time of planting.

Question 6. Thoroughly cultivated; deeply cultivated. Of course, no one will set out a pear orchard, or any other orchard, on an ill-drained piece of land.

Here the suspension of the rules was moved in order that a substitute for questions 13, 14, and 15 might be introduced and discussed, as follows: *Grapes*—what are the best and most profitable varieties or variety, for general cultivation for market and wine? best distances for planting? preparation of soil and manner of training, trimming, and cultivating? kind and form of trellis? curing and marketing the fruit, and profit per acre, to the successful grower, for market and for wine?

This subject covers a large ground, and was very fully discussed. Any land that will grow first-rate corn, will grow good grapes; but it must be cultivated deep, and be well drained. The best soil is dry and warm; protected by woods, or in some way from cutting winds; worked twenty inches deep, and made rich with manure, swamp muck sometimes.

Yearlings with plenty of roots, are safest planting, and having finer and more fibrous roots will produce in the third year as much as if they had been two years old when set out. They should be trimmed back to three buds. Cultivators of Isabella grapes spoke of net proceeds per acre, after the vines have come into full bearing, as more than $1,500 per acre; but this is under a high system of cultivation.

Others spoke of their gross receipts as $1,500 per acre.

Dr. Farley, of Cayuga, from five acres of Isabellas, about seven years of age, netted over $500 per acre; but as to the *best* variety. Diana, to my taste, is superior to the Delaware or Rebecca, and I had rather eat a half ripe Diana, than the best Isabella I ever saw. That the Diana is the most valuable grape that we have, is perfectly clear to my mind. Concord is very fine, and ripens its fruit fully two weeks earlier than the Isabella; is almost as good as the Isabella, and holds its fruit well after ripening.

Dr. Miner was full in the faith of Diana being one of the best grapes that we have, both for abundance of bearing, and for the table. Wherever Isabella will not ripen fully and well, Concord is *very* valuable.

Mr. Ainsworth's vines are planted 12 feet apart each way, and produce the third year from 10 to 20 pounds per vine. Mr. A. washes his vines each spring with soap-suds, applying it with a brush.

Dianas are very sweet, without much pulp, and in the language of a member, "perfect bags of juice:" they consequently promise to be most valuable as wine grapes. Specimens of Clinton wine were exhibited, which strongly resembled good Port. This Clinton wine requires rather high temperature part of the time, during its fermentation.

Question 7. Mr. Hooker would not put manure in among the roots; but after the tree is carefully planted, spread the manure on the surface of the ground around the tree, being careful not to touch the bark. The rain will carry the soluble portions to the roots of the tree, and in drouth, the insoluble portions act as a mulching; both being much to the benefit of the tree. Mr. Boardman once put a heavy coat of manure on a lot, and ploughed it under before planting his trees, and three-quarters of the trees died. Fresh manure under trees universally kills them, and whenever or wherever applied, it must not come in contact with the roots.

Question 8. The land where trees are growing should be in good heart, and should be kept so; for it is just as clearly a benefit to the farmer for him to feed his trees well, and to keep them fat, as it is to fodder a calf, or to keep his stock in good order. "How often and in what quantities" the manure should be applied, must vary with the varying necessities of each piece of land.

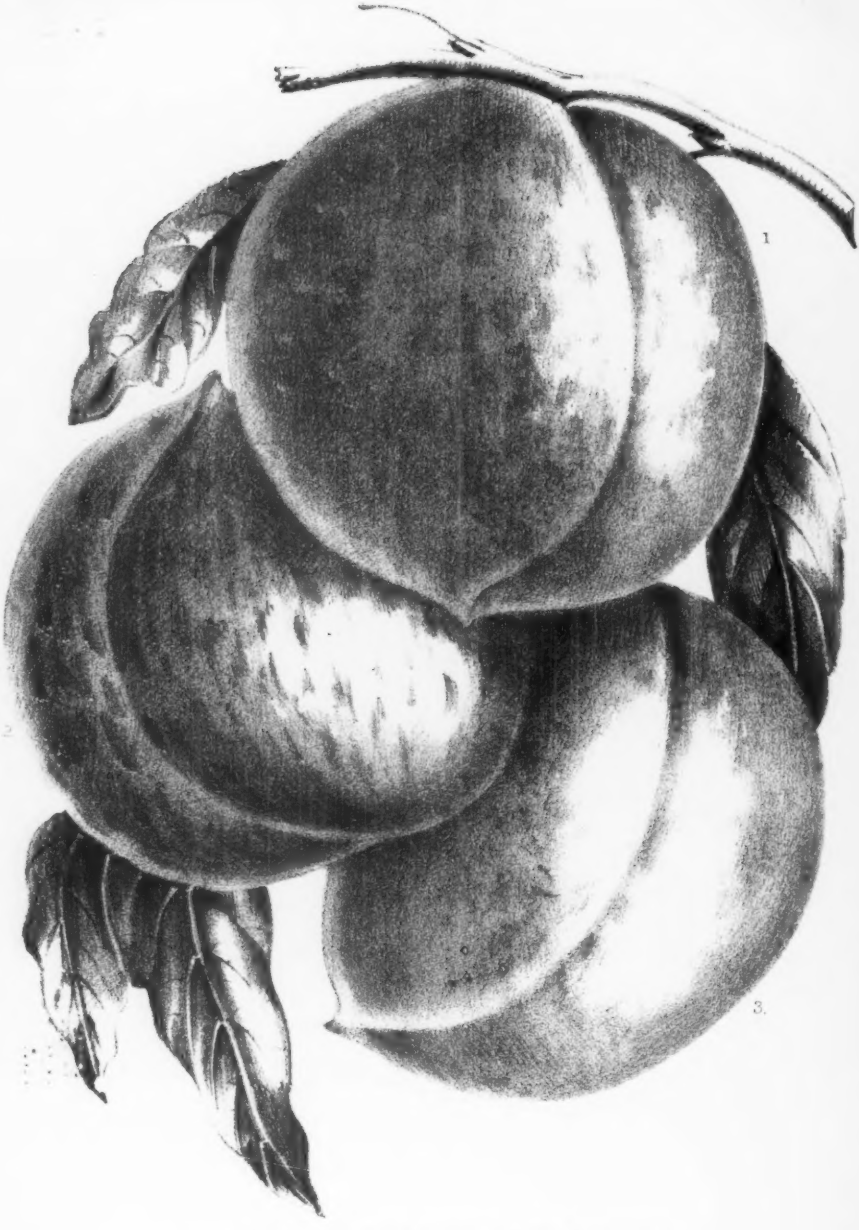
Question 9. "Prof. Comstock's" theory as to the collar of the plant being the seat of its vitality, is now wholly exploded. All grafting should be the "seedling stock grafting." The roots of old trees are not advisable to use; but a seedling stock can be divided into two or more parts, and used with success in grafting scions. No difference is perceptible as to "growth, durability, or productiveness."

Question 10. Apply the manure in any way, so that its soluble portions may be taken up by the roots in due season. Apply to a large area around the tree. By no means allow any fresh manure to come into direct contact with any of the roots. Where stable manure is not readily accessible, the ploughing in of a crop of green clover is as beneficial, as was stated when discussing question 6.

Mr. Smith moved that the next meeting be held at Rochester, which motion prevailed.

This meeting was the largest ever held by the Society; there being seldom less than two hundred present at any time.

During the sessions, practical illustrations of the best mode of pruning dwarf and standard pear trees; as well in the nursery rows, as at the time of transplanting and when bearing fruit, were given by Messrs. Yeomans and Barry. The meeting at this point became quite colloquial, and hardly a member but had some questions to ask of the gentlemen who held the tree and pruning-knife. This subject of pruning is a very interesting one, and one upon which few are so perfect as not to able to learn something.



1. STUMP THE WORLD. 2. COLUMBIA.
3 SHANGAE (OR) CHINESE CLING.

Lith. by Geo. Hayward, 120 Water St. N. Y.